

CABOT MICROELECTRONICS CORP

Form 10-K

November 15, 2017

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549  
FORM 10K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)  
OF THE SECURITIES EXCHANGE ACT OF 1934

FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 2017

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF  
THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

COMMISSION FILE NUMBER 00030205

CABOT MICROELECTRONICS CORPORATION

(Exact name of registrant as specified in its charter)

DELAWARE 364324765  
(State of Incorporation) (I.R.S. Employer Identification No.)

870 NORTH COMMONS DRIVE 60504  
AURORA, ILLINOIS (Zip Code)  
(Address of principal executive offices)

Registrant's telephone number, including area code: (630) 3756631

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, \$0.001 par value	The NASDAQ Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (Section 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	Accelerated filer	Non-accelerated filer (Do not check if a smaller reporting company)	Smaller reporting company	Emerging growth company
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If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

The aggregate market value of the registrant's Common Stock held beneficially or of record by stockholders who are not affiliates of the registrant, based upon the closing price of the Common Stock on March 31, 2017, as reported by the NASDAQ Global Select Market, was approximately \$1,894,517,878. For the purposes hereof, "affiliates" include all executive officers and directors of the registrant.

As of October 31, 2017, the Company had 25,356,916 shares of Common Stock outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's definitive Proxy Statement for the Annual Meeting of Stockholders to be held on March 6, 2018, are incorporated by reference in Part III of this Form 10-K to the extent stated herein.

This Form 10-K includes statements that constitute "forward-looking statements" within the meaning of federal securities regulations. For more detail regarding "forward-looking statements" see Item 7 of Part II of this Form 10-K.

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 FORM 10-K  
 FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 2017

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### **PART I**

#### **ITEM 1. BUSINESS**

##### **OUR COMPANY**

Cabot Microelectronics Corporation ("Cabot Microelectronics", "the Company", "us", "we", or "our"), which was incorporated in the state of Delaware in 1999, is the leading supplier of high-performance polishing slurries and second largest supplier of polishing pads used in the manufacture of advanced integrated circuit (IC) devices within the semiconductor industry, in a process called chemical mechanical planarization (CMP). CMP is a polishing process used by IC device manufacturers to planarize or flatten many of the multiple layers of material that are deposited upon silicon wafers in the production of advanced ICs. Our products play a critical role in the production of advanced semiconductor devices, helping to enable our customers to produce smaller, faster and more complex IC devices with fewer defects. Our mission is to create value by delivering high-performing and innovative solutions that solve our customer's challenges.

We currently operate predominantly in one industry segment – the development, manufacture and sale of CMP consumables products. We develop, produce and sell CMP slurries for polishing many of the conducting, insulating and isolating materials used in IC devices, and for polishing the disk substrates and magnetic heads used in hard disk drives. We also develop, manufacture and sell CMP polishing pads, which are used in conjunction with slurries in the CMP process. In addition, we pursue demanding surface modification applications in other industries through our Engineered Surface Finishes (ESF) business.

On October 22, 2015, we completed the acquisition of NexPlanar Corporation ("NexPlanar"), a U.S. based company that had been privately held, which specialized in the development, manufacture and sale of advanced CMP pad solutions for the semiconductor industry. We believe the acquisition of NexPlanar has provided an opportunity to expand our polishing pad product offerings with a complementary technology, and leverage our global infrastructure to better serve our customers on a global basis, including offering performance-advantaged slurry and pad consumable sets.

##### **CMP PROCESS WITHIN IC DEVICE MANUFACTURING**

IC devices, or "chips", are components in a wide range of electronic systems for computing, communications, manufacturing and transportation. Consumers most frequently encounter IC devices in mobile internet devices (MIDs) such as smart phones and tablets, microprocessors, application processors and memory chips in their desktop or laptop computers, and in automotive applications, gaming devices, and digital televisions. The multi-step manufacturing process for IC devices typically begins with a circular wafer of pure silicon, with the first manufacturing step referred to as a "wafer start". A large number of identical IC devices, or dies, are manufactured on each wafer at the same time. The initial steps in the manufacturing process build transistors and other electronic components on the silicon wafer. These are isolated from each other using a layer of insulating material, most often silicon dioxide, to prevent electrical signals from bridging from one transistor to another. These components are then wired together using conducting materials such as aluminum or copper in a particular sequence to produce a functional IC device with specific characteristics. When the conducting wiring on one layer of the IC device is completed, another layer of insulating material is added. The process of alternating insulating and conducting layers is repeated until the desired wiring within the IC device is achieved. At the end of the process, the wafer is cut into the individual dies, which are then packaged to form individual chips.

Demand for CMP consumables products, including slurries and pads, used in the production of IC devices is primarily based on the number of wafer starts by semiconductor manufacturers and the type and complexity of the IC devices

they produce. To enhance the performance of IC devices, IC device manufacturers have progressively increased the number and density of electronic components and wiring layers in each IC device. This is typically done in conjunction with shrinking the key dimensions on an IC device from one technology generation, or "node," to another. As a result, the number of transistors, wires and the number of discrete wiring layers have increased, increasing the complexity of the IC device and the related demand for CMP consumables products. As semiconductor technology has advanced and performance requirements of IC devices have increased, the percentage of IC devices that utilize CMP in the manufacturing process has increased steadily over time. We believe that CMP is used in the majority of all IC devices made today, and we expect that the use of CMP will continue to increase in the future.

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In the CMP polishing process, CMP consumables are used to remove excess material that is deposited during the IC manufacturing process, and to level and smooth the surfaces of the layers of IC devices, via a combination of chemical reactions and mechanical abrasion, leaving minimal residue and defects on the surface, with only the material necessary for circuit integrity remaining. CMP slurries are liquid solutions generally composed of high-purity deionized water and a proprietary mix of chemical additives and engineered abrasives that chemically and mechanically interact at an atomic level with the surface material on the wafer. CMP pads are engineered polymeric materials designed to distribute and transport the slurry to the surface of the wafer and distribute it evenly across the wafer. Grooves are formed into the surface of the pad to facilitate distribution of the slurry. The CMP process is performed on a CMP polishing tool. During the CMP process, the wafer is held on a rotating carrier, which is pressed down against a CMP pad. The CMP pad is attached to a rotating polishing table that spins in a circular motion in the opposite direction from the rotating wafer carrier. A CMP slurry is continuously applied to the polishing pad to facilitate and enhance the polishing process. Hard disk drive and silicon wafer manufacturers use similar processes to smooth the surface of substrate disks.

An effective CMP process is achieved through technical optimization of the CMP consumables in conjunction with an appropriately designed CMP process. Prior to introducing new or different CMP slurries or pads into its manufacturing process, an IC device manufacturer generally requires the product to be qualified in its processes through an extensive series of tests and evaluations. These qualifications are intended to confirm that the CMP consumable product will function properly within the customer's overall manufacturing process. These tests and evaluations may require minor changes to the CMP process or the CMP slurry or pad. While this qualification process varies depending on numerous factors, it is generally quite costly and may take six months or longer to complete. IC device manufacturers usually assess the cost, time required and impact on production when they consider implementing or switching to a new CMP slurry or pad.

CMP enables IC device manufacturers to produce smaller, faster and more complex IC devices with a greater density of transistors and other electronic components. With smaller IC devices, IC device manufacturers can increase the number of IC devices that fit on a wafer, which increases their throughput, or the number of IC devices that can be manufactured in a given time period. CMP also helps reduce the number of defective or substandard IC devices produced, which increases the device yield. Producing more complex and higher performing IC devices increases the value of the wafers processed. Improvements in throughput, yield and value per wafer improve the return on an IC device manufacturer's significant investment in manufacturing capacity, which is a high priority. More broadly, sustained growth in the semiconductor industry traditionally has been fueled by enhanced performance and lower unit costs, making IC devices more affordable in an expanding range of applications. We believe CMP remains a critical process in leading-edge semiconductor technology, enabling IC device manufacturers to efficiently produce the complex chips, particularly where higher performance may now be accompanied by higher unit costs.

## **PRECISION POLISHING**

Through our ESF business, we are applying our technical expertise in polishing techniques to demanding applications in other industries where shaping, enabling and enhancing the performance of surfaces is critical to success, such as for precision optics and electronic substrates, including silicon and silicon-carbide wafers.

Many of the production processes currently used in precision machining and polishing have been based on traditional, labor-intensive techniques, which are being replaced by computer-controlled, deterministic processes. Our wholly-owned subsidiary, QED Technologies International, Inc. (QED), is a leading provider of deterministic finishing technology for the precision optics industry. We believe precision optics are pervasive, serving several large existing industries such as semiconductor equipment, aerospace, defense, biomedical, research and digital imaging.



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### **OUR PRODUCTS**

#### **CMP CONSUMABLES FOR IC DEVICES**

We develop, produce and sell CMP slurries for polishing a wide range of materials that conduct electrical signals, including tungsten, copper, tantalum (commonly referred to as "barrier"), which is used in copper wiring applications, and aluminum. Slurries for polishing tungsten are used in the production of advanced memory applications, including mobile and server applications transitioning from traditional planar, or 2D NAND memory, to 3D NAND. Tungsten slurries are also used in advanced logic devices for a multitude of end use applications including MIDs such as smart phones and tablets, gaming devices, and in high-performance computing and artificial intelligence, as well as in legacy logic applications such as those used in automobiles and connected communication devices. Tungsten slurries are also used in some of the most advanced technologies, such as 3D memory and FinFET for advanced logic IC devices. Slurries for polishing copper and barrier materials are used in the production of advanced IC logic devices such as microprocessors for computers, and devices for graphic systems, gaming systems and communication devices, as well as in the production of advanced memory devices. These products include different slurries for polishing the copper film and the thin barrier layer used to separate copper from the adjacent insulating material. Slurries for polishing aluminum are used in certain advanced transistor gate structures. We offer multiple products for each technology node to enable different integration schemes depending on specific customer needs.

We also develop, manufacture and sell slurry products used to polish the dielectric insulating materials that separate conductive layers within logic and memory IC devices. Some of our slurry products for these materials are used in mature, high volume polishing applications called Interlayer Dielectric, or ILD, in the production of both logic and memory devices. Our more advanced dielectrics products are designed to deliver higher throughput, improved defectivity, and lower cost of ownership than required in traditional ILD applications, as well as to meet the more stringent and complex performance requirements of lower-volume, more specialized dielectrics polishing applications at advanced technology nodes. Some of the applications for advanced dielectrics slurries include shallow trench isolation (STI), "stop on poly" or "stop on nitride" isolation, bulk oxide polishing, and polishing of various dielectrics in advanced transistor designs.

We develop, produce and sell CMP polishing pads, which are consumable materials that work in conjunction with CMP slurries in the CMP polishing process. We believe that CMP polishing pads represent a natural adjacency to our CMP slurry business, since both technologies are required by our customers to deliver their intended result and utilize the same technical and sales infrastructure. Our polishing pad product portfolio includes pads utilizing both thermoset and thermoplastic polyurethane pad material. We produce and sell pads that can be used on a variety of polishing tools, over a range of applications, including tungsten, copper, and dielectrics, over a range of technology nodes, and on both 300mm and 200mm wafers.

#### **CMP CONSUMABLES FOR THE DATA STORAGE INDUSTRY**

We develop, produce and sell CMP slurries for polishing certain materials that are used in the production of rigid disks and magnetic heads used in hard disk drives for computer and other data storage applications, which represent an extension of our core CMP slurry technology and manufacturing capabilities established for the semiconductor industry. We believe CMP significantly improves the surface finish of these rigid disk coatings, resulting in greater storage capacity of the hard disk drive systems, and improves the production efficiency of manufacturers of hard disk drives.



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### **PRECISION OPTICS PRODUCTS**

Through our QED subsidiary, we design and produce precision polishing and metrology systems for advanced optics applications that allow customers to attain near-perfect shape and surface finish on a range of optical components such as mirrors, lenses and prisms. Historically, advanced optics have been produced using labor-intensive artisanal processes, and variability has been common. QED has automated the polishing process for advanced optics to enable rapid, deterministic and repeatable surface correction to the most demanding levels of precision in dramatically less time than with traditional means. QED's polishing systems use Magneto-Rheological Finishing (MRF), a proprietary surface figuring and finishing technology that employs magnetic fluids and sophisticated computer technology to polish a variety of shapes and materials. QED's metrology systems use proprietary Subaperture Stitching Interferometry (SSI) technology, which captures precise metrology data for large and/or strongly curved optical parts. SSI technology includes proprietary Aspheric Stitching Interferometry (ASI), which is designed to measure increasingly complex shapes, including non-spherical surfaces, or aspheres. QED's products also include MRF polishing fluids and MRF polishing components, as well as optical polishing services and polishing support services.

### **STRATEGY**

We collaborate closely with our customers to develop and manufacture products that offer innovative and reliable solutions to our customers' challenges, and we strive to consistently and reliably deliver and support these products around the world through what we believe is a robust global infrastructure and supply chain. We continue to focus on the execution of our primary strategies related to technology leadership, customer collaboration and supply chain excellence.

### **STRENGTHENING AND GROWING OUR CORE CMP CONSUMABLES BUSINESS**

**Delivering Innovative and High-Performing Solutions:** We believe that technology and innovation are vital to success in our CMP consumables business, and we devote significant resources to research and development. We focus our research and development activity to deliver innovative CMP consumables products for advanced applications for our technology-leading customers. We have established facilities in Japan, Singapore, South Korea, Taiwan, and the United States to meet our customers' technology needs on a global basis.

We believe an example of our ability to deliver innovative products for advanced applications is the growth we saw in revenue in fiscal 2017 from certain of our tungsten and dielectrics slurry products used in 3D memory, and tungsten slurry products for FinFET in advanced logic, as well as growth in revenue from our pads products. We believe our focused effort on advanced technologies with technology-leading customers will enable us to provide more compelling new products as technology continues to advance. In addition, we believe our polishing pads product area represents a promising opportunity for continued growth. We believe that the combination of pad technology and products from our NexPlanar acquisition with our organic pad technology and products enables us to better serve the needs of our customers on a global basis, including the ability to offer performance-differentiated CMP slurry and pad consumable sets.

**Close Collaboration with Our Customers:** We believe that building close relationships with our customers is essential to achieving long-term success in our business. We collaborate with our customers to identify and deliver new and improved CMP solutions, to integrate our products into their manufacturing processes, and to assist them with supply, warehouse and inventory management. Our customers demand a highly reliable supply source, and we believe we have a competitive advantage because of our ability to timely deliver high-quality products and service from the early stages of product development through the high-volume commercial use of our products. We have strategically located our research and development and clean room facilities, manufacturing operations, and related technical and customer support teams to be responsive to our customers' needs, and believe they provide us with a competitive

advantage.

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We believe the several supplier excellence awards we received from our customers in fiscal 2017 are evidence of our commitment to, and success in, delivering high-performing and high-quality products to our customers through close collaboration with them. These awards recognized our product quality and reliability, our technology leadership, and our customer support capabilities. Our global business teams are focused on a range of projects with our customers to address specific business opportunities for advanced technologies.

**Robust Global Supply Chain:** We believe that product and supply chain quality is critical to success in our business. Our customers demand continuous improvement in the performance of our products, in terms of product quality and consistency. We strive to reduce variation in our products and processes in order to increase quality, productivity and efficiency, and improve the uniformity and consistency of performance of our CMP consumables products.

Variability reduction becomes more important to our customers as technology advances. Our global manufacturing sites are managed to provide the people, training and systems needed to support stringent industry demands for product quality. To support our quality initiative, we use Six Sigma, a systematic, data-driven approach and methodology for improving quality by reducing variability, across our Company. We believe our use of Six Sigma has contributed to lower variability in our products and sustained improvement in productivity in our operations.

We also believe that continuous improvement and variation reduction in our global supply chain are critical to our success and the success of our customers. We believe our capabilities in supply chain management and quality systems differentiate us from our competitors. We believe our worldwide CMP consumables manufacturing plants and global network of suppliers also provide supply chain flexibility as needed.

## **ENGINEERED SURFACE FINISHES**

Beyond our core CMP consumables business through our ESF business, we develop and provide products for demanding polishing applications in other industries, such as in precision optics and electronic substrates. Our QED subsidiary continues to be the technology leader in deterministic finishing for the precision optics industry. QED's polishing and metrology technology enables customers to replace manual processes with automated solutions that provide more precise and repeatable results. Another aspect of our ESF business is the polishing of electronic substrates, including silicon and silicon-carbide wafers. CMP is utilized in the production of these wafers to ensure they meet the stringent specifications required by IC manufacturers.

## **INDUSTRY TRENDS**

### **SEMICONDUCTOR INDUSTRY**

We believe the semiconductor industry continues to exhibit various trends, including: demand within the semiconductor business is driven primarily by MIDs, secondarily by personal computers (PCs), as well as a wide range of other electronic applications including high-performance computing and artificial intelligence; overall industry demand fluctuates; our customer base consolidates; there is pressure to reduce costs; and, the pace of technology advancement has slowed.

We have discussed the significant shift in semiconductor industry demand over the past several years from IC devices for PCs to MIDs. Demand for MIDs is largely consumer-based, versus more enterprise-based demand for PCs, and this shift introduced fluctuations in semiconductor industry demand. For example, the semiconductor industry experienced relatively strong demand conditions during the second half of our fiscal 2016 through the end of our fiscal 2017 following soft demand conditions during the first half of our fiscal 2016. Industry reports suggest demand during our fiscal 2017 was primarily driven by a robust memory market, generally due to the growing requirements for storage in a wide range of end-use applications, as well as strengthening of demand for certain logic applications.

There are several factors that could drive future industry growth: the ongoing transition from traditional planar, or 2D, memory to advanced 3D memory for mobile, server, and PC applications; expected need for advanced semiconductor devices for high performance computing, virtual and augmented reality, smart phone applications, and artificial intelligence; demand for greater connectivity with wearables, peripherals, and the internet of things; increased semiconductor content in automobiles; and semiconductor industry development in China. We continue to believe that semiconductor industry demand will grow over the long term based on increased usage of IC devices in existing applications, as well as future applications.

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Over a number of years, we have seen our customer base within the semiconductor industry consolidate as larger semiconductor manufacturers have generally grown faster than the smaller ones, through mergers and acquisitions as well as through alliances among and between different companies. Costs to achieve the required scale in manufacturing within the semiconductor industry continue to rise, along with the related costs of research and development, and larger manufacturers generally have greater access to the resources necessary to manage their businesses, than do smaller ones. This trend is particularly evident in capital spending within the industry, as the largest semiconductor companies account for an increasingly large portion of total capital spending in the industry compared to the past.

As demand for more advanced and lower cost electronic devices grows, there is continued pressure on IC device manufacturers to reduce their costs. Many manufacturers reduce costs by pursuing ever-increasing scale in their operations, while seeking to reduce their production costs by increasing their production yields, regardless of their scale. Thus, they look for CMP consumables products with quality and performance attributes that can help them reduce their overall cost of ownership, pursue ways to use smaller amounts of CMP materials, and aggressively pursue price reductions for these materials.

Manufacturers also have historically reduced cost, and simultaneously improved device performance, by migrating to smaller technology nodes. However, as the industry continues to shrink dimensions, leading edge technology node transitions are becoming more challenging due to technical and physical obstacles, and the pace of technology change has slowed. To achieve performance and cost improvements, semiconductor manufacturers are placing greater emphasis on new device architectures, including 3D memory and FinFET. Industry commentary suggests that approximately 30% of the NAND market has been converted to 3D memory, and the industry transition is expected to continue over the next several years. We believe semiconductor manufacturers will continue to depend upon highly engineered materials in these new architectures, requiring innovative CMP solutions.

## **CMP CONSUMABLES INDUSTRY**

Demand for CMP consumables is primarily driven by wafer starts, so the CMP consumables industry reflects semiconductor industry demand patterns in terms of growth, cyclicity and seasonality and varying demand for specific device types. In fiscal 2016, we saw a softer demand pattern during the first half of the fiscal year and stronger demand in the second half, which was consistent with the conditions experienced by a number of other participants in the semiconductor industry. However, in fiscal 2017, we saw stronger demand throughout the fiscal year, which also was consistent with other participants in the semiconductor industry. Our revenue generated in China and Korea during fiscal 2017 increased 26% and 25%, respectively, from fiscal 2016, which is attributable to semiconductor growth in China and overall growth in the memory market. Over the long term, we anticipate worldwide demand for CMP consumables used by IC device manufacturers will grow as a result of expected long-term growth in wafer starts, the trend to more advanced technologies and an associated increase in the number of CMP polishing steps required to produce these advanced devices, and the introduction of new materials that are expected to require CMP.

We expect the anticipated long-term growth in demand will be partially mitigated by continued efficiency improvements in CMP consumable usage as customers seek to reduce their costs. As discussed above, semiconductor manufacturers look for ways to lower the cost of CMP consumables in their production operations, including improvements in technology, dilution of slurry, use of concentrated slurry products, or reduction of slurry flow rate, to reduce the total amount of slurry used, and extension of pad life. In addition, CMP demand also depends upon the specific mix of IC device demand, since the intensity of CMP usage varies by IC device type.

We believe that CMP technical solutions are becoming more complex, with advanced technologies generally requiring greater customization of CMP slurry products by customer, tool set and process integration approach. As a result, we

generally see customers selecting suppliers earlier in their development processes and maintaining preferred supplier relationships through production. Therefore, we believe that close collaboration with our customers early in the development cycle offers the best opportunity for optimal CMP solutions. We also believe that research and development programs with customers and suppliers continue to be vital to our success as we develop and commercialize innovative, high-performing and more cost-effective CMP solutions.

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### **COMPETITION**

We compete in the CMP consumables sector, which is characterized by advances in technology and demanding requirements for product quality and consistency. We face competition from other CMP consumables suppliers. We also may face competition in the future from significant changes in technology or emerging technologies. However, we believe we are well-positioned to continue our leadership in CMP slurries, and to continue to grow our business in CMP pads. We believe we have the experience, scale, capabilities and infrastructure that are required for success, and we work closely with technology-leading customers in the semiconductor industry to meet their growing expectations as a trusted business partner.

Our CMP slurry competitors range from small companies that compete with a single product or in a single geographic region, to divisions of global companies with multiple lines of CMP products. However, we believe we are the leader in CMP slurries. In our view, we are the only CMP slurry supplier today that serves a broad range of customers by offering and supporting a full line of CMP slurry solutions for all major applications, with a proven track record of supplying these products globally in high volumes with the requisite high level of technical support services.

With respect to CMP polishing pads, a division of DowDuPont has held the leading position in this area for many years. We believe we are the second largest supplier of CMP polishing pads to the industry. A number of other companies also participate in this area of the CMP consumables business. We believe that the combination of our organic pad technology and products with those from our acquisition of NexPlanar enable us to meet our customers' needs for lower defectivity, greater pad consistency, and longer pad life. In addition, we believe that our full array of polishing pads offering enables us to better serve our customers on a global basis, including offering performance-differentiated slurry and pad consumable sets.

Our QED subsidiary operates in the precision optics industry. There are few direct competitors of QED and we believe its technology is unique and provides a competitive advantage to customers in the precision optics industry, which still relies heavily on traditional artisanal methods of fabrication.

### **CUSTOMERS, SALES AND MARKETING**

Within the semiconductor industry, our customers are generally producers of logic or memory IC devices, or providers of IC foundry services. Some logic customers, and so-called "fabless" companies, outsource some or all of the production of their devices to foundries, which provide contract manufacturing services, in order to avoid the high cost of process development, construction and operation of a fab, or to provide additional capacity when needed. In fiscal 2017, excluding revenue attributable to data storage and ESF customers, approximately 45% of our revenue was from memory customers, 35% from foundry customers and 20% from logic customers.

We believe the primary influences of our customers' CMP consumables buying decisions are: overall cost of ownership, which represents the cost to purchase, use and maintain a product; product quality and consistency; product performance and its impact on a customer's overall yield; engineering support; and, supply assurance. We believe that greater customer expertise within the CMP process, more challenging integration schemes, additional and unique polishing materials, and cost pressures will continue to increase demands on CMP consumables suppliers like us.

We use a collaborative approach to build close relationships with our customers in a variety of areas, and we have customer-focused teams in each major geographic region. Our sales process begins long before the actual sale of our products, and occurs on a number of levels. Due to the long lead times from research and development to product commercialization and sales, we have research teams that collaborate with technology-leading customers on emerging

applications years before the products are required by the market. We also have development teams that interact closely with these customers, using our research and development facilities and capabilities to design CMP products tailored to their needs. Next, our applications engineers work with customers to integrate our products into their manufacturing processes. Finally, as part of our sales process, our logistics and sales personnel provide supply, warehouse and inventory management services for our customers.



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We market our products primarily through direct sales to our customers, although we use distributors in certain areas. We believe this strategy of primarily direct sales provides us an additional means to collaborate with our customers, and provides our customers with the most efficient means by which to procure our products.

Our QED subsidiary supports customers in the semiconductor equipment, aerospace, defense, research, biomedical and digital imaging industries. QED counts among its worldwide customers leading precision optics manufacturers, major semiconductor original equipment manufacturers, research institutions, and contractors to the United States and other governments.

In fiscal 2017, our five largest customers accounted for approximately an aggregate 57% of our revenue, with Samsung, Taiwan Semiconductor Manufacturing Corporation, and Micron Technology, Inc. (following its acquisition of Inotera Memories Inc.) accounting for approximately 16%, 13%, and 10%, respectively, of our revenue. For additional information on our customers, refer to Note 2 of the "Notes to the Consolidated Financial Statements" included in Item 8 of Part II of this Form 10-K.

## **RESEARCH, DEVELOPMENT AND TECHNICAL SUPPORT**

We believe that technology is vital to success in our CMP and ESF businesses, and we plan to continue to devote significant resources to research, development and technical support (R&D), and balance our efforts between shorter and longer-term market needs. We focus our R&D efforts on product innovation at leading-edge applications for our technology-leading customers. We develop new and enhanced CMP solutions tailored to these customers' requirements using our expertise in chemical formulation, materials science, product engineering and manufacturing technology. We work closely with these customers at their facilities to identify their specific technology and manufacturing challenges and to translate these challenges into viable CMP process solutions.

Our technology efforts are focused on five main areas that span the early stage of product development involving new materials, processes and designs several years in advance of commercialization, to continuous improvement of already commercialized products in daily use in our customers' manufacturing facilities:

Research related to fundamental CMP technology;  
Development of new and enhanced CMP consumables products, including collaboration on joint development projects with technology-leading customers and suppliers;  
Process development to support rapid and effective commercialization of new products;  
Technical support of our CMP products in our customers' research, development and manufacturing facilities; and,  
Development of polishing and metrology applications outside of the semiconductor industry.

Our research in CMP slurries and pads addresses a breadth of complex and interrelated performance criteria that relate to the functional performance of the IC device, our customers' manufacturing yields, and their overall cost of ownership. We design slurries and pads that are capable of polishing one or more materials of differing hardness, sometimes at the same time, that comprise the semiconductor circuitry. In addition, our products must achieve the desired surface conditions at high polishing rates, high processing yields and low consumables costs in order to provide acceptable cost of ownership for our customers. As technology advances and materials and designs increase in complexity, these challenges require significant investments in R&D.

We also commit R&D resources to our ESF business. Products under development in this area include products used to polish silicon wafers to improve the surface quality of these wafers and reduce the customers' total cost of ownership.

We believe that our technology provides us with a competitive advantage, and that our investments in R&D provide us with polishing and metrology capabilities that support the most advanced and challenging customer technology requirements. In fiscal years 2017, 2016 and 2015, we incurred approximately \$55.7 million, \$58.5 million and \$59.8 million, respectively, in R&D expenses. Investments in property, plant and equipment to support our R&D efforts are capitalized and depreciated over their useful lives.

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Our global R&D team includes experts from the semiconductor industry and scientists from key disciplines required for the development of high-performance CMP consumable products. We operate an R&D facility in Aurora, Illinois, that features a Class 1 clean room and advanced equipment for product development, including 300mm polishing and metrology capabilities; a facility in Japan, which includes a Class 1 clean room with 300mm polishing, metrology and slurry development capabilities; a facility in Taiwan that includes a clean room with 200mm polishing capability; a facility in South Korea that provides slurry formulation capability and 300mm polishing capability; an R&D laboratory in Singapore that provides polishing, metrology and slurry development capabilities for the data storage industry; and, a research facility in Rochester, New York that supports our QED business. These facilities underscore our commitment to continuing to invest in our technology infrastructure to maintain our technology leadership and to be responsive to the needs of our customers.

## **RAW MATERIALS SUPPLY**

Engineered abrasive particles are significant raw materials we use in many of our CMP slurries. Our strategy is to secure various sources of different raw materials, as appropriate, to enable the desired performance of our products, and monitor those sources as necessary to provide supply assurance. Also, we have entered into multi-year supply agreements with a number of suppliers for the purchase of raw materials in the interest of supply assurance and to control costs. For additional information regarding these agreements, refer to "Tabular Disclosure of Contractual Obligations", included in "Management's Discussion and Analysis of Financial Condition and Results of Operations," in Item 7 of Part II of this Form 10-K.

## **INTELLECTUAL PROPERTY**

We believe our intellectual property is important to our success and ability to compete, and we also differentiate our products and technology by their high quality and reliability, and our quality systems, global supply chain and logistics. As of October 31, 2017, we had 1,352 active worldwide patents, of which 278 are U.S. patents, and 472 pending worldwide patent applications, of which 61 are in the U.S. Many of these patents are important to our continued development of new and innovative products for CMP and related processes, as well as for new businesses. Our patents have a range of duration. We refresh our intellectual property on an ongoing basis through continued innovation. As an example, we have had patent coverage that was important to some of our legacy business, and continue to have significant other patents that protect this technology and other legacy and advanced technology with a range of duration. We attempt to protect our intellectual property rights through a combination of patent, trademark, copyright and trade secret laws, use of certain manufacturing technologies, exclusive contractual arrangements with suppliers, and with employee and third party-nondisclosure and assignment agreements. We vigorously protect and defend our intellectual property, and have been successful in this regard.

Most of our intellectual property has been developed internally, but we also may acquire intellectual property from others to enhance our intellectual property portfolio. These enhancements may be via licenses or assignments or we may acquire certain proprietary technology and intellectual property when we make acquisitions. We believe these technology rights can enhance our competitive advantage by providing us with future product development opportunities and expanding our intellectual property portfolio.

## **ENVIRONMENTAL MATTERS**

Our facilities are subject to various environmental, safety and health laws and regulations, including those relating to air emissions, wastewater discharges, the handling and disposal of solid and hazardous wastes, and occupational

safety and health. We believe that our facilities are in substantial compliance with applicable environmental laws and regulations. Our major operations in the United States, Japan, Singapore, South Korea and Taiwan are certified under current ISO 14001 Environmental and OHSAS 18001 Safety and Health standards, which requires that we implement and operate according to various procedures that demonstrate waste reduction, energy conservation, injury reduction and other environmental, health and safety objectives. We are actively pursuing certification under revised ISO 14001 standards. We have incurred, and will continue to incur, capital and operating expenditures and other costs in complying with environmental, safety and health laws and regulations in the United States and other countries in which we do business, but we do not expect these costs will be material.

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### **EMPLOYEES**

We believe our employees are the foundation of our success. As of October 31, 2017, we employed 1,179 individuals, including 694 in operations, 242 in research and development and technical, 91 in sales and marketing and 152 in administration. In general, our employees are not covered by collective bargaining agreements. We have not experienced any work stoppages and consider our relations with our employees to be good.

### **FINANCIAL INFORMATION ABOUT GEOGRAPHIC AREAS**

We sell our products worldwide. We believe our geographic coverage allows us to utilize our business and technical expertise from a diverse, global workforce, strategically located in close proximity to our customers. For more financial information about geographic areas, see Note 20 of the "Notes to the Consolidated Financial Statements" included in Item 8 of Part II of this Form 10-K.

### **AVAILABLE INFORMATION**

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, definitive proxy statements on Form 14A, current reports on Form 8-K, and any amendments to those reports are made available free of charge on our Company website, [www.cabotcmp.com](http://www.cabotcmp.com), as soon as reasonably practicable after such reports are filed with the Securities and Exchange Commission (SEC). Any materials that the Company files with the SEC are also available to read and copy at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. Statements regarding beneficial ownership of our securities by our executive officers and directors are made available on our Company website following the filing of such with the SEC. In addition, the SEC's website (<http://www.sec.gov>) contains reports, proxy statements, and other information that we file electronically with the SEC.

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**ITEM 1A. RISK FACTORS**

We do not believe there have been any material changes in our risk factors since the filing of our Annual Report on Form 10-K for the fiscal year ended September 30, 2016. However, we may update our risk factors, including adding or deleting them, in our SEC filings from time to time for clarification purposes or to include additional information, at management's discretion, even when there have been no material changes.

**RISKS RELATING TO OUR BUSINESS**

**DEMAND FOR OUR PRODUCTS FLUCTUATES AND OUR BUSINESS MAY BE ADVERSELY AFFECTED BY WORLDWIDE ECONOMIC AND INDUSTRY CONDITIONS**

Our business is affected by economic and industry conditions and our revenue is primarily dependent upon semiconductor demand. Historically, semiconductor demand has fluctuated due to economic and industry cycles and seasonal shifts in demand, which can affect our business, causing demand for our products to fluctuate. For example, the strengthening of demand conditions in the semiconductor industry we experienced during the second half of fiscal 2016 continued through fiscal 2017, following relatively soft demand conditions during the second half of fiscal 2015 and the first half of fiscal 2016. Furthermore, competitive dynamics within the semiconductor industry may impact our business. Our limited visibility to future customer orders makes it difficult for us to predict industry trends. If the global economy or the semiconductor industry weakens, whether in general or as a result of specific factors, such as macroeconomic factors, or unpredictable events such as natural disasters or geopolitical events, we could experience material adverse impacts on our results of operations and financial condition.

Adverse global economic and industry conditions could have other negative effects on our Company. For instance, we could experience negative impacts on cash flows due to the inability of our customers to pay their obligations to us, or our production process could be harmed if our suppliers cannot fulfill their obligations to us. We also might have to reduce the carrying value of goodwill and other intangible assets, which could harm our financial position and results of operations.

Some additional factors that affect demand for our products include: demand trends for different types of electronic devices, such as logic versus memory IC devices, or digital versus analog IC devices; the various technology nodes at which those products are manufactured; customers' efficiencies in the use of CMP consumables; customers' device architectures and specific manufacturing processes; the short order to delivery time for our products; quarter-to-quarter changes in customer order patterns; market share and competitive gains and losses; and pricing changes by us and our competitors.

**WE HAVE A NARROW PRODUCT RANGE AND OUR PRODUCTS MAY BECOME OBSOLETE, OR TECHNOLOGICAL CHANGES MAY REDUCE OR LIMIT INCREASES IN THE CONSUMPTION OF CMP SLURRIES AND PADS**

Our business is substantially dependent on CMP slurries and pads, which account for the majority of our revenue. Our business would suffer if these products became obsolete or if consumption of these products decreased. Our success depends on our ability to keep pace with technological changes and advances in the semiconductor industry and to adapt, improve and customize our products for advanced IC applications in response to evolving customer needs and industry trends. Since its inception, the semiconductor industry has experienced technological changes and advances in the design, manufacture, performance and application of IC devices. Our customers continually pursue lower cost of ownership and higher quality and performance of materials consumed in their manufacturing processes, including CMP slurries and pads, as a means to reduce costs, increase the yield in their manufacturing facilities, and achieve desired performance of the IC devices they produce. We expect these technological changes, and this drive

toward lower costs, higher quality and performance and higher yields, will continue in the future. Potential technology developments in the semiconductor industry, as well as our customers' efforts to reduce consumption of CMP consumables, including through use of smaller quantities, could render our products less important to the IC device manufacturing process.

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### **A SIGNIFICANT AMOUNT OF OUR BUSINESS COMES FROM A LIMITED NUMBER OF LARGE CUSTOMERS AND OUR REVENUE AND PROFITS COULD DECREASE SIGNIFICANTLY IF WE LOST ONE OR MORE OF THESE CUSTOMERS**

Our CMP consumables customer base is concentrated among a limited number of large customers. The semiconductor industry has been consolidating as the larger semiconductor manufacturers have generally grown faster than the smaller ones, through business gains, mergers and acquisitions, and strategic alliances. Industry analysts predict that this trend will continue, which means the semiconductor industry will be comprised of fewer and larger participants in the future if their prediction is correct. One or more of these principal customers could stop buying CMP consumables from us or could substantially reduce the quantity of CMP consumables purchased from us. Our principal customers also hold considerable purchasing power, which can impact the pricing and terms of sale of our products. Any deferral or significant reduction in the quantity or price of CMP consumables sold to these principal customers could seriously harm our business, financial condition and results of operations.

In fiscal 2017, our five largest customers accounted for approximately an aggregate 57% of our revenue, with Samsung, Taiwan Semiconductor Manufacturing Company (TSMC), and Micron Technology, Inc. (following its acquisition of Inotera Memories Inc.) accounting for approximately 16%, 13%, and 10%, respectively, of our revenue. In fiscal year 2016, our five largest customers accounted for approximately 54% of our revenue, with TSMC and Samsung each accounting for approximately 15% of our revenue.

### **OUR BUSINESS COULD BE SERIOUSLY HARMED IF OUR COMPETITORS DEVELOP COMPETITIVE CMP CONSUMABLES PRODUCTS, OFFER BETTER PRICING, SERVICE OR OTHER TERMS, OR OBTAIN CERTAIN INTELLECTUAL PROPERTY RIGHTS**

Competition from other CMP consumables manufacturers or any new entrants could seriously harm our business and results of operations, and this competition could continue to increase. Competition has and will likely continue to impact the prices we are able to charge for our CMP consumables products, as well as our overall business. In addition, our competitors could have or obtain intellectual property rights that could restrict our ability to market our existing products and/or to innovate and develop new products, could attempt to introduce products similar to ours following the expiration of our patents, as referenced with respect to certain intellectual property important to some of our legacy business, or could attempt to introduce products that do not fall within the scope of our intellectual property rights.

### **ANY PROBLEM OR DISRUPTION IN OUR SUPPLY CHAIN, INCLUDING SUPPLY OF OUR MOST IMPORTANT RAW MATERIALS, OR IN OUR ABILITY TO MANUFACTURE AND DELIVER OUR PRODUCTS TO OUR CUSTOMERS, COULD ADVERSELY AFFECT OUR RESULTS OF OPERATIONS**

We depend on our supply chain to enable us to meet the demands of our customers. Our supply chain includes the raw materials we use to manufacture our products, our production operations and the means by which we deliver our products to our customers. Our business could be adversely affected by any problem or interruption in the supply of the key raw materials we use in our CMP slurries and pads, including raw materials that do not meet the stringent quality and consistency requirements of our customers, any problem or interruption that may occur during production or delivery of our products, such as weather-related problems, natural disasters, or geopolitical or labor-related issues, or any difficulty in producing sufficient quantities of our products to meet growing demand from our customers. Our supply chain may also be negatively impacted by unanticipated price increases due to supply restrictions beyond the



control of our Company or our raw materials suppliers.

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We believe it would be difficult to promptly secure alternative sources of key raw materials in the event one of our suppliers becomes unable to supply us with sufficient quantities of raw materials that meet the quality and technical specifications required by us and our customers. In addition, new contract terms, contractual amendments to existing agreements with, or non-performance by, our suppliers, including any significant financial distress our suppliers may suffer, could adversely affect us. Also, if we change the supplier or type of key raw materials we use to make our CMP slurries or pads, or are required to purchase them from a different manufacturer or manufacturing facility or otherwise modify our products, in certain circumstances our customers might have to requalify our CMP slurries and pads for their manufacturing processes and products. The requalification process could take a significant amount of time and expense to complete and could occupy technical resources of our customers that might otherwise be used to evaluate our new products, thus delaying potential revenue growth, or motivate our customers to consider purchasing products from our competitors, possibly interrupting or reducing our sales of CMP consumables to these customers.

## **WE ARE SUBJECT TO RISKS ASSOCIATED WITH OUR FOREIGN OPERATIONS**

We currently have operations and a large customer base outside of the United States. Approximately 86% of our revenue was generated by sales to customers outside of the United States during each of fiscal years 2017, 2016 and 2015. We may encounter risks in doing business in certain foreign countries, including, but not limited to, adverse changes in economic and political conditions, both in foreign locations and in the United States with respect to non-U.S. operations of U.S. businesses like ours, geopolitical tensions, fluctuation in exchange rates, compliance with a variety of foreign laws and regulations and related audits and investigations, as well as difficulty in enforcing business and customer contracts and agreements, including protection of intellectual property rights. We also may encounter risks that we may not be able to repatriate earnings from our foreign operations, derive anticipated tax benefits of our foreign operations or recover the investments made in our foreign operations, whether due to regulatory or policy changes in the U.S. or in the countries outside of the U.S. in which we do business, or other factors.

In particular, China is a fast-developing market for the semiconductor industry, and is an area of potential continued growth for us. As business volume between China and the rest of the world continues to grow, there is risk that geopolitical, regulatory and political matters could adversely affect trade for companies like ours based on the complex relationships among China, the United States, and other countries in the Asia Pacific region, which could have a material adverse impact on our business. In addition, there are risks that the Chinese government may, among other things, require the use of local suppliers, compel companies that do business in China to partner with local companies to conduct business, and, provide incentives to government-backed local customers to buy from local suppliers rather than companies like ours, all of which could adversely impact our business, including our results of operations.

## **BECAUSE WE RELY HEAVILY ON OUR INTELLECTUAL PROPERTY, OUR FAILURE TO ADEQUATELY OBTAIN OR PROTECT IT COULD SERIOUSLY HARM OUR BUSINESS**

Protection of intellectual property is particularly important in our industry because we develop complex technical formulas and processes for CMP products that are proprietary in nature and differentiate our products from those of our competitors. Our intellectual property is important to our success and ability to compete. We attempt to protect our intellectual property rights through a combination of patent, trademark, copyright and trade secret laws, as well as employee and third-party nondisclosure and assignment agreements. In addition, we protect our product differentiation through various other means, such as proprietary supply arrangements for certain raw materials, and use of certain manufacturing technologies. Due to our international operations, we pursue protection in different jurisdictions, which may provide varying degrees of protection, and we cannot provide assurance that we can obtain

adequate protection in each such jurisdiction. Our failure to obtain or maintain adequate protection of our intellectual property rights for any reason, including through the patent prosecution process or in the event of litigation related to such intellectual property, could seriously harm our business. In addition, certain types of intellectual property, such as patents, expire after a certain period of time, and products protected by our patents then lose such protection, so we refresh our intellectual property portfolio on an ongoing basis through continued innovation, and failure to do so could adversely affect our business. Also, the costs of obtaining or protecting our intellectual property could negatively affect our operating results.

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**WE MAY PURSUE ACQUISITIONS OF, INVESTMENTS IN, AND MERGERS OR STRATEGIC ALLIANCES WITH OTHER ENTITIES, WHICH COULD DISRUPT OUR OPERATIONS AND HARM OUR OPERATING RESULTS IF THEY ARE UNSUCCESSFUL OR WE MAY ENCOUNTER UNANTICIPATED ISSUES IN IMPLEMENTING THEM**

We expect to continue to make investments in technologies, assets and companies, either through acquisitions, mergers, investments or alliances, in order to supplement our internal growth and development efforts. Acquisitions, mergers, and investments, including our acquisition of NexPlanar, which we completed on October 22, 2015, involve numerous risks, including the following: difficulties and risks in integrating the operations, technologies, products and personnel of acquired companies; difficulties and risks from unanticipated issues arising subsequent to a transaction related to the other entity; diversion of management's attention from normal daily operations of the business; increased risk associated with foreign operations; potential difficulties and risks in entering markets in which we have limited or no direct prior experience and where competitors have stronger positions; potential difficulties in operating new businesses with different business models; potential difficulties with regulatory or contract compliance in areas in which we have limited experience; initial dependence on unfamiliar supply chains or relatively small supply partners; insufficient revenues to offset increased expenses associated with acquisitions; potential loss of key employees of the acquired companies; or inability to effectively cooperate and collaborate with our alliance partners.

Further, we may never realize the perceived or anticipated benefits of a business combination or merger with, or asset or other acquisition of, or investments in, other entities. Transactions such as these could have negative effects on our results of operations, in areas such as contingent liabilities, gross profit margins, amortization charges related to intangible assets and other effects of accounting for the purchases of other business entities. Investments in and acquisitions of technology-related companies or assets are inherently risky because these businesses or assets may never develop, and we may incur losses related to these investments. For example, in fiscal 2016, we recorded \$1.0 million of impairment expense related to certain in-process technology, related to the NexPlanar acquisition. In addition, we may be required to impair the carrying value of these acquisitions or investments to reflect other than temporary declines in their value, which could harm our business and results of operations.

**BECAUSE WE HAVE LIMITED EXPERIENCE IN BUSINESS AREAS OUTSIDE OF CMP CONSUMABLES, EXPANSION OF OUR BUSINESS INTO OTHER PRODUCTS AND APPLICATIONS MAY NOT BE SUCCESSFUL**

An element of our strategy has been to leverage our current customer relationships, technological expertise and other capabilities and competencies to expand our business beyond CMP consumables into other areas, such as other electronic materials. Additionally, in our Engineered Surface Finishes business, we are pursuing other surface modification applications. Expanding our business into new product areas could involve technologies, production processes and business models in which we have limited experience, and we may not be able to develop and produce products or provide services that satisfy customers' needs, or we may be unable to keep pace with technological or other developments. Also, our competitors may have or obtain intellectual property rights that could restrict our ability to market our existing products and/or to innovate and develop new products.

**CERTAIN CRITICAL INFORMATION SYSTEMS COULD BE SUSCEPTIBLE TO CYBERSECURITY AND OTHER THREATS**

We maintain and rely upon certain critical information systems for the effective operation of our business. These information systems include, but are not limited to, telecommunications, the Internet, our corporate intranet, various computer hardware and software applications, network communications, and email. These information systems may

be owned and maintained by us, our outsourced providers, or third parties such as vendors, contractors, and Cloud providers. All of these information systems are subject to disruption, breach or failure from various sources including, but not limited to, attacks, degradation, and failures resulting from potential sources, including viruses, malware, denial of service, destructive or inadequate code, power failures, and physical damage. Confidential and/or sensitive information stored on these information systems, or transmitted to or from Cloud storage, could be intentionally or unintentionally compromised, lost, and/or stolen. While we have implemented security procedures and virus protection software, intrusion prevention systems, access control, and emergency recovery processes to mitigate risks like these with respect to information systems that are under our control, they are not fail-safe and may be breached. Further, we cannot assure that third parties that we rely upon for various IT services will maintain sufficient vigilance and controls over their systems. Our inability to use or access these information systems at critical points in time, or unauthorized releases of proprietary or confidential information, could unfavorably impact the timely and efficient operation of our business, including our results of operations, and our reputation.

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### **OUR INABILITY TO ATTRACT AND RETAIN KEY PERSONNEL COULD CAUSE OUR BUSINESS TO SUFFER**

We utilize and rely upon a global workforce. If we fail to attract and retain the necessary managerial, technical and customer support personnel, our business and our ability to maintain existing and obtain new customers, develop new products and provide acceptable levels of customer service could suffer. We compete worldwide with other industry participants for qualified personnel, particularly those with significant experience in the semiconductor industry. The loss of services of key employees, or our inability to obtain or maintain visas or other travel or residency documents on their behalf with respect to our business needs, could harm our business and results of operations. Periodically, we engage in succession planning for our key employees, and our Board of Directors reviews succession planning for our executive officers, including our chief executive officer, on an annual basis.

### **RISKS RELATING TO THE MARKET FOR OUR COMMON STOCK**

#### **THE MARKET PRICE MAY FLUCTUATE SIGNIFICANTLY AND RAPIDLY**

The market price of our common stock has fluctuated and could continue to fluctuate significantly as a result of factors such as: economic, geopolitical, political and stock market conditions generally and specifically as they may impact participants in the semiconductor and related industries; changes in financial estimates and recommendations by securities analysts who follow our stock; earnings and other announcements, and changes in market evaluations, by securities analysts, investors, market participants or others, of or related to, us or participants in the semiconductor and related industries; changes in business, trade or regulatory conditions affecting us or participants in the semiconductor and related industries; announcements or implementation by us, our competitors, or our customers of technological innovations, new products or different business strategies; changes in our capital deployment strategy, or entering into a business combination; and trading volume of our common stock.

#### **ANTI-TAKEOVER PROVISIONS UNDER OUR CERTIFICATE OF INCORPORATION AND BYLAWS MAY DISCOURAGE THIRD PARTIES FROM MAKING AN UNSOLICITED BID FOR OUR COMPANY**

Our certificate of incorporation, our bylaws, and various provisions of the Delaware General Corporation Law may make it more difficult or expensive to effect a change in control of our Company. For instance, our amended and restated certificate of incorporation provides for the division of our Board of Directors into three classes as nearly equal in size as possible with staggered three-year terms.

We have adopted change in control arrangements covering our executive officers and other key employees. These arrangements provide for a cash severance payment, continued medical benefits and other ancillary payments and benefits upon termination of service of a covered employee's employment following a change in control, which may make it more expensive to acquire our Company.

#### **ITEM 1B. UNRESOLVED STAFF COMMENTS**

None.

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**ITEM 2. PROPERTIES**

Our principal U.S. facilities that we own consist of:

- a global headquarters and research and development facility in Aurora, Illinois, comprising approximately 200,000 square feet;
- a commercial slurry manufacturing plant and distribution center in Aurora, Illinois, comprising approximately 175,000 square feet;
- a commercial polishing pad manufacturing plant and offices in Aurora, Illinois, comprising approximately 48,000 square feet; and,
- a facility in Addison, Illinois, comprising approximately 15,000 square feet.

Our principal U.S. facilities that we lease consist of:

- \* two commercial pad manufacturing plants and offices in Hillsboro, Oregon, comprising approximately 73,000 square feet; and,
- \* a development and technical support facility and business office in Rochester, New York, comprising approximately 23,000 square feet.

Our principal foreign facilities that we own consist of:

- \* a commercial slurry and pad manufacturing plant, automated warehouse, research and development facility and offices in Kaohsiung County, Taiwan, comprising approximately 170,000 square feet;
- \* a commercial slurry manufacturing plant and distribution center, and a development and technical support facility in Geino, Japan, comprising approximately 144,000 square feet; and,
- \* a commercial slurry manufacturing plant, development facility and offices in Oseong, South Korea, comprising approximately 109,000 square feet.

Our principal foreign facilities that we lease consist of:

- \* an office, laboratory and commercial polishing pad manufacturing plant in Hsin-Chu, Taiwan, comprising approximately 31,000 square feet; and,
- \* a commercial slurry manufacturing plant, research and development facility and business office in Singapore, comprising approximately 24,000 square feet.

We believe that our facilities are suitable and adequate for their intended purpose and provide us with sufficient capacity and capacity expansion opportunities and technological capability to meet our current and expected demand in the foreseeable future. For example, we expanded our facilities in Oseong, South Korea in fiscal 2017 to support future growth.

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ITEM 3. LEGAL PROCEEDINGS

While we are not involved in any legal proceedings that we believe will have a material impact on our consolidated financial position, results of operations or cash flows, we periodically become a party to legal proceedings in the ordinary course of business.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

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## EXECUTIVE OFFICERS OF THE REGISTRANT

Set forth below is information concerning our executive officers and their ages as of October 31, 2017.

NAME	AGE	POSITION
David H. Li	44	President and Chief Executive Officer
H. Carol Bernstein	57	Vice President, Secretary and General Counsel
Yumiko Damashek	61	Vice President
William S. Johnson	60	Executive Vice President and Chief Financial Officer
Thomas F. Kelly	52	Vice President and Chief Commercial Officer
Ananth Naman	47	Vice President, Asia Pacific, and Chief Technology Officer
Lisa A. Polezoes	53	Vice President, Human Resources
Daniel D. Woodland	47	Vice President and Chief Marketing and Operations Officer
Thomas S. Roman	56	Principal Accounting Officer and Corporate Controller

DAVID H. LI has served as our President and Chief Executive Officer, and as a director of our Company, since January 2015. From June, 2008 through December 2014, Mr. Li served as our Vice President of the Asia Pacific Region. Prior to that role, Mr. Li held various leadership roles, including our Managing Director of China and Korea, and our Global Business Director for Tungsten and Advanced Dielectrics. Prior to that, he held a variety of leadership positions in operations, sourcing and investor relations since joining us in 1998. Mr. Li received a B.S. in Chemical Engineering from Purdue University and an M.B.A. from Northwestern University.

H. CAROL BERNSTEIN has served as our Vice President, Secretary and General Counsel since August 2000. From January 1998 until joining us, Ms. Bernstein served as the General Counsel and Director, Industrial Technology Development of Argonne National Laboratory/the University of Chicago. From 1985 through 1997, she served in various positions with the IBM Corporation, culminating in serving as an Associate General Counsel, and was the Vice President, Secretary and General Counsel of Advantis Corporation, an IBM joint venture. Ms. Bernstein received her B.A. from Colgate University and her J.D. from Northwestern University; she is a member of the Bar of the States of Illinois and New York.

YUMIKO DAMASHEK will retire as a Vice President in December 2017, having served from January 2015 until October 2017 as our Vice President of Operations and Quality. From November 2005 through December 2014, Ms. Damashek served in various management and executive roles with the Asia Pacific region, including as Vice President, Japan and Asia Operations. Prior to joining us, Ms. Damashek served as President for Celerity Japan, Inc. Before that, she held various leadership positions at Global Partnership Creation, Inc. and Millipore Corporation. Ms. Damashek received her B.A. from the University of Arizona and her M.B.A. from San Diego State University.

WILLIAM S. JOHNSON has served as our Vice President and Chief Financial Officer since April 2003, and was named Executive Vice President in April 2013. Prior to joining us, Mr. Johnson served as Executive Vice President and Chief Financial Officer for Budget Group, Inc. from August 2000 to March 2003. Before that, Mr. Johnson worked for BP Amoco for 16 years in various senior finance and management positions, culminating in serving as President of Amoco Fabrics and Fibers Company. Mr. Johnson received his B.S. in Mechanical Engineering from the University of Oklahoma and his M.B.A. from the Harvard Business School. Mr. Johnson is also a director of CTS Corporation.

THOMAS F. KELLY became our Vice President and Chief Commercial Officer in October 2017, and prior to that had served as our Vice President of Corporate Development since September 2016. From 2012 until joining us, Mr. Kelly served as the Director of Global Raw Materials Procurement for Celanese Corporation. Prior to that, he held various roles at Chemtura Corporation, culminating in serving as Vice President of New Business Development and

the Program Management Organization from 2010 to 2012, and was Vice President of Product Management, Operations and Integration Planning from 2008 to 2010. Before that, Mr. Kelly held various senior business operations, product management, and supply chain assurance positions with us from 1999 through 2008. Mr. Kelly received his B.S. and M.S. degrees in Chemical Engineering from Villanova University, and his M.B.A. from Drexel University.

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ANANTH NAMAN has served as our Vice President and Chief Technology Officer since January 2015, and as of October 2017, also assumed responsibility for our Asia Pacific region. Previously, Dr. Naman was our Vice President of Research and Development since January 2011. Prior to that, Dr. Naman was our Director of Product Development starting in April 2009 and Director of Pads Technology from January 2006 through March 2009. Prior to joining us, Dr. Naman managed research and development efforts at Honeywell International from July 2000 to December 2005, and from 1997 to 2000 he held positions in research and development at Seagate Technology. Dr. Naman earned B.S., M.S. and Ph.D. degrees in Materials Science and Engineering from the University of Florida.

LISA A. POLEZOES has served as our Vice President of Human Resources since October 2012. Prior to that, Ms. Polezoes was our Global Director of Human Resources from August 2006, and previously had been our Director of Global Compensation and Benefits from 2005. Prior to joining us, Ms. Polezoes had various human resources and management positions at Praxair, Montgomery Ward and Hyatt Corporation. Ms. Polezoes received her B.S. in Institutional Management from Purdue University and her M.B.A. from Benedictine University.

DANIEL D. WOODLAND became our Vice President and Chief Marketing and Operations Officer in October 2017, and prior to that had served as our Vice President of Marketing since January 2015. From June 2009 through December 2014, Dr. Woodland served as our Global Business Director for Dielectrics, after having served as our Marketing Director since December 2006. Prior to that, Dr. Woodland served as Product Line Manager, and held various research and development positions after joining us in September 2003. Before joining Cabot Microelectronics, Dr. Woodland held management roles at OMNOVA Solutions. Dr. Woodland received a B.A. in Physics from the University of California – Berkeley, and a Ph.D. in Physics from the University of Maine.

THOMAS S. ROMAN has served as our Corporate Controller and Principal Accounting Officer since February 2004 and previously served as our North American Controller. Prior to joining us in April 2000, Mr. Roman was employed by FMC Corporation in various financial reporting, tax and audit positions. Before that, Mr. Roman worked for Gould Electronics and Arthur Andersen LLP. Mr. Roman is a C.P.A. and earned a B.S. in Accounting from the University of Illinois and an M.B.A. from DePaul University.

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## PART II

**ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES**

Our common stock has traded publicly under the symbol "CCMP" since our initial public offering in April 2000, currently on the NASDAQ Global Select Market, and formerly the NASDAQ National Market. The following table sets forth the range of quarterly high and low sales prices for our common stock.

	HIGH	LOW
Fiscal 2016		
First Quarter	45.77	38.31
Second Quarter	44.00	34.53
Third Quarter	44.26	38.37
Fourth Quarter	53.45	41.12
Fiscal 2017		
First Quarter	64.45	50.66
Second Quarter	77.01	62.41
Third Quarter	81.85	69.88
Fourth Quarter	81.39	68.00
Fiscal 2018 First Quarter (through October 31, 2017)	97.97	79.36

As of October 31, 2017, there were approximately 659 holders of record of our common stock. In January 2016, we announced the initiation of a quarterly cash dividend program. In conjunction with this program, our Board of Directors declared quarterly cash dividends of \$0.18 per share, during the second, third, and fourth quarters of fiscal 2016, and during the first quarter of fiscal 2017. In the second, third, and fourth quarters of fiscal 2017, our Board of Directors declared quarterly cash dividends of \$0.20 per share, the latest of which we paid on or about October 30, 2017 to shareholders of record as of September 25, 2017. The declaration and payment of future dividends is subject to the discretion and determination of the Company's Board of Directors and management, based on a variety of factors, and the program may be suspended, terminated or modified at any time for any reason.

**ISSUER PURCHASES OF EQUITY SECURITIES**

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (in thousands)
Jul. 1 through Jul. 31, 2017	44,975	\$ 74.29	44,975	\$ 126,918
Aug. 1 through Aug. 31, 2017	61,618	73.50	61,531	\$ 122,395
Sep. 1 through Sep. 30, 2017	6,178	73.81	5,425	\$ 121,993

Total	112,771	\$ 73.83	111,931	\$ 121,993
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In January 2016, our Board of Directors authorized an increase in the amount available under our share repurchase program from the previously remaining \$75.0 million to \$150.0 million. Under this program, we repurchased 167,809 shares for \$12.0 million in fiscal 2017. As of September 30, 2017, \$122.0 million remains available under our share repurchase program. The manner in which the Company repurchases its shares is discussed in Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, under the heading "Liquidity and Capital Resources", of this Form 10-K. To date, we have funded share purchases under our share repurchase program from our available cash balance, and anticipate we will continue to do so.

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Separate from this share repurchase program, we purchased a total of 35,739 shares during fiscal 2017 pursuant to the terms of our Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan (EIP) and our Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan, as amended (OIP), as shares withheld from award recipients to cover payroll taxes on the vesting of shares of restricted stock awarded under the EIP and OIP.

**EQUITY COMPENSATION PLAN INFORMATION**

See Part II, Item 12 of this Form 10-K for information regarding shares of common stock that may be issued under the Company's existing equity compensation plans.

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**INDEX****STOCK PERFORMANCE GRAPH**

The following graph illustrates the cumulative total stockholder return on our common stock during the period from September 30, 2012 through September 30, 2017 and compares it with the cumulative total return on the NASDAQ Composite Index and the Philadelphia Semiconductor Index. The comparison assumes \$100 was invested on September 30, 2012 in our common stock and in each of the foregoing indices and assumes reinvestment of the quarterly cash dividends declared in fiscal 2016 and 2017. The performance shown is not necessarily indicative of future performance. See "Risk Factors" in Part I, Item 1A above.

	9/12	12/12	3/13	6/13	9/13	12/13	3/14	6/14	9/14	12/14	3/15
Cabot Microelectronics Corporation	100.00	101.05	98.89	93.94	109.59	130.05	125.21	127.06	117.96	134.66	142.20
NASDAQ Composite	100.00	96.68	105.31	110.11	123.38	137.33	138.61	146.03	148.79	157.04	162.74
Philadelphia Semiconductor	100.00	102.38	111.04	115.93	122.99	133.25	143.72	156.21	159.83	171.67	167.54
	6/15	9/15	12/15	3/16	6/16	9/16	12/16	3/17	6/17	9/17	
Cabot Microelectronics Corporation	134.06	110.24	124.59	116.95	121.54	152.40	182.47	221.90	214.42	232.75	
NASDAQ Composite	166.45	154.52	167.76	163.66	162.91	178.82	181.00	199.48	207.77	220.25	
Philadelphia Semiconductor	161.45	146.57	160.40	167.01	174.14	206.14	213.19	234.57	241.86	274.57	

**INDEX****ITEM 6. SELECTED FINANCIAL DATA**

The following selected financial data for each year of the five-year period ended September 30, 2017, has been derived from the audited consolidated financial statements.

The information set forth below is not necessarily indicative of results of future operations and should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and the consolidated financial statements and notes to those statements included in Items 7 and 8 of Part II of this Form 10-K, as well as Risk Factors included in Item 1A of Part I of this Form 10-K.

**CABOT MICROELECTRONICS CORPORATION**  
**SELECTED FINANCIAL DATA - FIVE YEAR SUMMARY**  
(Amounts in thousands, except per share amounts)

	Year Ended September 30,				
	2017	2016	2015	2014	2013
<b>Consolidated Statement of Income Data:</b>					
Revenue	\$507,179	\$430,449	\$414,097	\$424,666	\$433,131
Cost of goods sold	253,050	220,247	201,866	221,573	221,015
Gross profit	254,129	210,202	212,231	203,093	212,116
<b>Operating expenses:</b>					
Research, development and technical	55,658	58,532	59,778	59,354	61,373
Selling and marketing	30,846	27,717	24,983	26,513	27,985
General and administrative	55,637	49,445	52,430	45,418	46,287
Total operating expenses	142,141	135,694	137,191	131,285	135,645
Operating income	111,988	74,508	75,040	71,808	76,471
Interest expense	4,529	4,723	4,524	3,354	3,643
Other income (expense), net	1,913	653	681	140	1,392
Income before income taxes	109,372	70,438	71,197	68,594	74,220
Provision for income taxes	22,420	10,589	15,051	17,843	21,642
Net income	\$86,952	\$59,849	\$56,146	\$50,751	\$52,578
Basic earnings per share	\$3.47	\$2.47	\$2.32	\$2.12	\$2.27
Weighted average basic shares outstanding	25,015	24,077	24,040	23,704	22,924
Diluted earnings per share	\$3.40	\$2.43	\$2.26	\$2.04	\$2.19
Weighted average diluted shares outstanding	25,512	24,477	24,632	24,611	23,760
Cash dividends per share	\$0.78	\$0.54	\$-	\$-	\$-
<b>As of September 30,</b>					
	2017	2016	2015	2014	2013
<b>Consolidated Balance Sheet Data:</b>					
Cash and cash equivalents	\$397,890	\$287,479	\$354,190	\$284,155	\$226,029
Other current assets	153,092	149,351	140,318	143,838	136,769
Property, plant and equipment, net	106,361	106,496	93,743	100,821	111,985
Other assets	176,757	183,904	72,223	72,353	76,809
Total assets	\$834,100	\$727,230	\$660,474	\$601,167	\$551,592



Current liabilities	\$91,213	\$65,885	\$60,644	\$55,448	\$68,221
Long-term debt	132,997	146,961	155,313	164,063	150,937
Other long-term liabilities	14,853	16,736	15,553	9,654	8,992
Total liabilities	239,063	229,582	231,510	229,165	228,150
Stockholders' equity	595,037	497,648	428,964	372,002	323,442
Total liabilities and stockholders' equity	\$834,100	\$727,230	\$660,474	\$601,167	\$551,592

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### ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following "Management's Discussion and Analysis of Financial Condition and Results of Operations" (MD&A), as well as disclosures included elsewhere in this Form 10-K, include "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. This Act provides a safe harbor for forward-looking statements to encourage companies to provide prospective information about themselves so long as they identify these statements as forward-looking and provide meaningful cautionary statements identifying important factors that could cause actual results to differ from the projected results. All statements other than statements of historical fact we make in this Form 10-K are forward-looking. In particular, the statements herein regarding future sales and operating results; growth or contraction of, and trends in, the industry and markets in which the Company participates; the Company's management; various economic or political factors and international or national events; regulatory or legislative activity; product performance; the generation, protection and acquisition of intellectual property, and litigation related to such intellectual property; new product introductions; development of new products, technologies and markets; the Company's supply chain; the financial conditions of the Company's customers; natural disasters; the acquisition of or investment in, or collaboration with other entities, including NexPlanar Corporation ("NexPlanar"); uses and investment of the Company's cash balance, including dividends and share repurchases, which may be suspended, terminated or modified at any time for any reason, based on a variety of factors; financing facilities and related debt, payment of principal and interest, and compliance with covenants and other terms; the Company's capital structure; the Company's current or future tax rate; the operation of facilities by the Company; and statements preceded by, followed by or that include the words "intends," "estimates," "plans," "believes," "expects," "anticipates," "should," "could" or similar expressions, are forward-looking statements. Forward-looking statements reflect our current expectations and are inherently uncertain. Our actual results may differ significantly from our expectations. We assume no obligation to update this forward-looking information. The section entitled "Risk Factors" describes some, but not all, of the factors that could cause these differences.

The following discussion and analysis should be read in conjunction with our historical financial statements and the notes to those financial statements which are included in Item 8 of Part II of this Form 10-K.

## OVERVIEW

Cabot Microelectronics Corporation ("Cabot Microelectronics", "the Company", "us", "we", or "our") supplies high-performance polishing slurries and pads used in the manufacture of advanced integrated circuit (IC) devices within the semiconductor industry, in a process called chemical mechanical planarization (CMP). CMP polishes surfaces at an atomic level, thereby helping to enable IC device manufacturers to produce smaller, faster and more complex IC devices with fewer defects. We operate predominantly in one industry segment – the development, manufacture and sale of CMP consumables. We develop, produce and sell CMP slurries for polishing many of the conducting and insulating materials used in IC devices, and for polishing the disk substrates and magnetic heads used in hard disk drives. We also develop, manufacture and sell CMP polishing pads, which are used in conjunction with slurries in the CMP process. We also pursue other demanding surface modification applications through our Engineered Surface Finishes (ESF) business, in which we develop and provide products for demanding polishing applications in other industries.

In fiscal 2017, we experienced strong demand for our products, consistent with demand conditions in the overall semiconductor industry. Semiconductor industry demand appears to have been driven by a robust memory market, generally due to the growing requirements for storage in a wide range of end-use applications, a healthier logic market driven by mobile product launches, as well as continued semiconductor growth in China. Industry reports and some

of our customers are forecasting continued firm demand in the first quarter of our fiscal 2018. Over the long-term, we believe there are a number of factors that will drive growth in semiconductor industry demand: the ongoing transition from traditional planar, or 2D memory, to advanced 3D memory for mobile, server, and personal computer applications; continued strong need for high performance computing, virtual and augmented reality, smart phone applications, and advanced machine learning; demand for greater connectivity with the internet of things; and expanding electronics in automotive applications. However, there are many factors that make it difficult for us to predict future revenue trends for our business, including those discussed in Part I, Item 1A entitled "Risk Factors" in this Form 10-K.

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Revenue for fiscal 2017 was \$507.2 million, which represented an increase of 17.8% from \$430.4 million reported for fiscal 2016, and was a record for the Company. The increase in revenue from fiscal 2016 included record annual revenue in our tungsten slurry, polishing pad, and ESF product areas, which grew 19.5%, 31.9%, and 24.7%, respectively, from last year. Revenue from our dielectrics slurry products increased 21.3% from fiscal 2016.

Gross profit for fiscal 2017 expressed as a percentage of revenue was 50.1%, compared to 48.8% in fiscal 2016, including 100 and 110 basis point, respectively, adverse impacts of NexPlanar amortization expense. The increase in gross profit percentage from fiscal 2016 was primarily due to higher sales volume, a higher-valued product mix, and lower raw material costs, partially offset by higher fixed manufacturing costs, including costs associated with our Short Term Incentive Program (STIP). Our gross profit percentage was slightly above our revised fiscal 2017 guidance of between 49.0% and 50.0% of revenue. We currently expect our gross profit percentage for full fiscal year 2018 to be between 50.0% and 52.0% of revenue, which includes approximately 100 basis points of NexPlanar amortization expense. We may continue to experience fluctuations in our gross profit due to a number of factors, including fluctuations in our product mix and the extent to which we utilize our manufacturing capacity, which may cause our quarterly gross profit to be above or below this annual guidance range.

Operating expenses, which include research, development and technical, selling and marketing, and general and administrative expenses, were \$142.1 million in fiscal 2017 compared to \$135.7 million in fiscal 2016, including \$1.9 million and \$1.8 million, respectively of NexPlanar amortization expense. The increase in operating expenses of 4.8%, or \$6.4 million, from fiscal 2016 was primarily due to higher staffing-related costs, including costs associated with our STIP. We currently expect total operating expenses for our full fiscal year 2018 to be in the range of \$142.0 million to \$147.0 million, including approximately \$1.9 million of NexPlanar amortization expense.

Diluted earnings per share in fiscal 2017 were a record level of \$3.40, and represented an increase of 39.9%, or \$0.97, from \$2.43 in fiscal 2016. The increase was primarily due to higher revenue and a higher gross profit margin, partially offset by a higher effective tax rate and higher operating expenses.

## **CRITICAL ACCOUNTING POLICIES AND ESTIMATES**

This MD&A, as well as disclosures included elsewhere in this Form 10-K, are based upon our audited consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingencies. On an ongoing basis, we evaluate the estimates used, including those related to bad debt expense, inventory valuation, valuation and classification of auction rate securities, impairment of long-lived assets and investments, business combinations, goodwill, other intangible assets, interest rate swaps, net investment hedge, share-based compensation, income taxes and contingencies. We base our estimates on historical experience, current conditions and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources, as well as for identifying and assessing our accounting treatment with respect to commitments and contingencies. Actual results may differ from these estimates under different assumptions or conditions. We believe the following critical accounting policies involve significant judgments and estimates used in the preparation of our consolidated financial statements.

## **ALLOWANCE FOR DOUBTFUL ACCOUNTS**

We maintain an allowance for doubtful accounts for estimated losses resulting from the potential inability of our customers to make required payments. Our allowance for doubtful accounts is based on historical collection

experience, adjusted for any specific known conditions or circumstances. While historical experience may provide a reasonable estimate of uncollectible accounts, actual results may differ from what was recorded. We will continue to monitor the financial solvency of our customers and, if global economic, or individual customer, conditions weaken, we may have to record additional increases to our allowance for doubtful accounts. As of September 30, 2017, our allowance for doubtful accounts represented 2.6% of gross accounts receivable. If we had increased our estimate of bad debts by 100 basis points to 3.6% of gross accounts receivable, our general and administrative expenses would have increased by \$0.6 million.

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### **INVENTORY VALUATION**

We value inventory at the lower of cost or market and write down the value of inventory for estimated obsolescence or if inventory is deemed unmarketable. An inventory reserve is maintained based upon a historical percentage of actual inventories written off applied against the inventory value at the end of the period, adjusted for known conditions and circumstances. We exercise judgment in estimating the amount of inventory that is obsolete. Should actual product marketability be affected by conditions that are different from those projected by management, revisions to the estimated inventory reserve may be required. If we had increased our reserve for obsolete inventory at September 30, 2017 by 10%, our cost of goods sold would have increased by \$0.2 million.

### **VALUATION AND CLASSIFICATION OF AUCTION RATE SECURITIES**

As of September 30, 2017, we owned two auction rate securities (ARS) recorded at cost with a par value of \$5.3 million and an estimated fair value of \$4.9 million, which are classified as other long-term assets on our Consolidated Balance Sheet and are considered held-to-maturity investments. In general, ARS investments are securities with long-term nominal maturities for which interest rates are intended to be reset through a Dutch auction every seven to 35 days. Historically, these periodic auctions provided a liquid market for these securities; however, beginning in 2008, general uncertainties in the global credit markets significantly reduced liquidity in the ARS market, and this illiquidity continues. Despite this lack of liquidity, there have been no defaults in payment of the underlying securities and interest income on these holdings continues to be received on scheduled interest payment dates. Our ARS, when purchased, were issued by A-rated municipalities. Although the credit ratings of both municipalities have been downgraded since our original investment, one of the ARS is credit enhanced with bond insurance, and the other has become an obligation of the bond insurer. Both ARS currently carry a credit rating of AA- by Standard & Poor's.

We classify these investments as held-to-maturity based on our intention and ability to hold the securities until maturity. Although there has been occasional trading activity on these securities, the ARS market is not considered active. Consequently, we determine the fair value of these securities using level 2 fair value inputs, including trading activity. The calculation of fair value and the balance sheet classification for our ARS requires critical judgments and estimates by management, including the probabilities that a security may be monetized through a future successful auction, of a refinancing of the underlying debt, or of a default in payment by the issuer or the bond insurance carrier.

An other-than-temporary impairment must be recorded when a credit loss exists; that is when the present value of the expected cash flows from a debt security is less than the amortized cost basis of the security. However, we believe the gross \$0.4 million unrecognized loss on these securities is due to illiquidity in the ARS market rather than credit loss. If illiquidity in the ARS market continues, if issuers of our ARS are unable to refinance the underlying securities, if the issuing municipalities are unable to pay their debt obligations and the bond insurance fails, or if credit ratings decline or other adverse developments occur in the credit markets, we may not be able to monetize our securities in the near term and may be required to adjust the carrying value of these instruments through an impairment charge that may be deemed other-than-temporary.

### **IMPAIRMENT OF LONG-LIVED ASSETS AND INVESTMENTS**

We assess the recoverability of the carrying value of long-lived assets, including finite-lived intangible assets, whenever events or changes in circumstances indicate that the assets may be impaired. We perform a periodic review of our long-lived assets to determine if such impairment indicators exist. We must exercise judgment in assessing whether an event of impairment has occurred. For purposes of recognition and measurement of an impairment loss, long-lived assets are either individually identified or grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. We must exercise judgment in this grouping. If the sum of the undiscounted future cash flows expected to result from the

identified asset group is less than the carrying value of the asset group, an impairment provision may be required. The amount of the impairment to be recognized is calculated by subtracting the fair value of the asset group from the net book value of the asset group. Determining future cash flows and estimating fair values require significant judgment and are highly susceptible to change from period to period because they require management to make assumptions about future sales and cost of sales generally over a long-term period. We recorded impairment expense on long-lived assets of \$0.9 million in fiscal 2017 related to surplus research and development equipment, which was subsequently sold for a gain. We did not record any impairment expense in fiscal 2016 or 2015.

We evaluate the estimated fair value of investments annually, or more frequently if indicators of potential impairment exist, to determine if an other-than-temporary impairment in the value of the investment has taken place.

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### BUSINESS COMBINATIONS

Our acquisition of NexPlanar, which we completed on October 22, 2015, was our first acquisition under the current standards of accounting for business combinations. These standards require assets and liabilities of an acquired business to be recognized at their estimated fair value. We engage independent third-party appraisal firms to assist us in determining the fair values of assets and liabilities acquired. This valuation requires management to make significant estimates and assumptions, especially with respect to long-lived and intangible assets. Goodwill represents the residual value of the purchase price over the fair value of net assets acquired, including identifiable intangible assets.

Critical estimates in valuing certain of the intangible assets include but are not limited to: future expected cash flows related to acquired developed technologies and patents and assumptions about the period of time the technologies will continue to be used in the Company's product portfolio; expected costs to develop the in-process technology into commercially viable products and estimated cash flows from the products when completed; and discount rates. Management's estimates of value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable. Assumptions may be incomplete or inaccurate, and unanticipated events and circumstances may occur which may cause actual realized values to be different from management's estimates.

In fiscal 2016, we recorded \$58.4 million of goodwill and \$55.0 million of intangible assets related to our acquisition of NexPlanar. The intangible assets included \$50.0 million with finite lives and \$5.0 million of in-process technology. In the fourth quarter of fiscal 2016, we determined that one of the products under development was unlikely to meet our original cash flow projections based on information received subsequent to the date of acquisition. Consequently, we recorded a \$1.0 million impairment of this intangible asset.

### GOODWILL AND INTANGIBLE ASSETS

Purchased intangible assets with finite lives are amortized over their estimated useful lives and are evaluated for impairment using a process similar to that used to evaluate other long-lived assets. Goodwill and indefinite lived intangible assets are not amortized and are tested annually in our fourth fiscal quarter or more frequently if indicators of potential impairment exist, using a fair-value-based approach. The recoverability of goodwill is measured at the reporting unit level, which is defined as either an operating segment or one level below an operating segment. A component is a reporting unit when the component constitutes a business for which discrete financial information is available and segment management regularly reviews the operating results of the component. Components may be combined into one reporting unit when they have similar economic characteristics. We have four reporting units, all of which had goodwill as of September 30, 2017, the date of our annual impairment test. Two of the reporting units, CMP Slurries and CMP Pads, represent 94% of the goodwill balance on our Consolidated Balance Sheet as of September 30, 2017. The goodwill related to CMP Pads resulted from our acquisition of NexPlanar.

Accounting guidance provides an entity the option to assess the fair value of a reporting unit either using a qualitative analysis ("step zero") or a quantitative analysis ("step one"). Similarly, an entity has the option to use a step zero or step one approach to determine the recoverability of indefinite-lived intangible assets. In fiscal 2015, 2016 and 2017, we chose to use a step one analysis for both goodwill impairment and for the recoverability of indefinite-lived intangible assets.

Factors requiring significant judgment include assumptions related to future growth rates, discount factors, royalty rates and tax rates, among others. Changes in economic and operating conditions that occur after the annual impairment analysis or an interim impairment analysis that impact these assumptions may result in future impairment charges. Our reporting units had a calculated fair value that was in excess of the carrying value between 54% and 346%. If the fair value of each of the reporting units decreased by 10%, the fair value would still exceed the carrying



value by more than 38%. As a result of the review performed in the fourth quarter of fiscal 2017, and the related sensitivity analysis, we determined that there was no impairment of our goodwill as of September 30, 2017. In fiscal 2016, as noted above, we recorded a \$1.0 million impairment of certain NexPlanar in-process technology.

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### **INTEREST RATE SWAPS**

In fiscal 2015, we entered into floating-to-fixed interest rate swap agreements to hedge the variability in LIBOR-based interest payments on a portion of our outstanding variable rate debt. The fair value of our interest rate swaps is estimated using standard valuation models and market-based observable inputs over the contractual term, including one-month LIBOR-based yield curves, among others. We consider the risk of nonperformance, including counterparty credit risk, in the calculation of the fair value. We have designated these swap agreements as cash flow hedges pursuant to ASC 815, "Derivatives and Hedging". As cash flow hedges, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swaps and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of accumulated other comprehensive income or loss, while the ineffective portion is recorded as a component of interest expense. Changes in the method by which we pay interest from one-month LIBOR to another rate of interest could create ineffectiveness in the swaps, and result in amounts being reclassified from other comprehensive income into net income. Hedge effectiveness is tested quarterly to determine if hedge treatment continues to be appropriate.

### **NET INVESTMENT HEDGE**

In the fourth quarter of fiscal 2017, we entered into forward foreign exchange contracts in an effort to protect our net investment in a foreign operation against potential adverse changes resulting from foreign currency fluctuation. This transaction is designated as a net investment hedge and is accounted for under hedge accounting. The fair value of the forward foreign exchange contracts is estimated using a standard valuation model and market-based observable inputs over the contractual term, including forward rates and/or the Overnight Index Swap (OIS) curve as of the valuation date. Unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Hedge effectiveness is assessed using the Forward Method, consistent with guidance in ASC 815. Consistent with this guidance, the entire change in fair value of the forward contracts is recorded in the same manner as the related currency translation adjustments within other comprehensive income as the hedging instruments are expected to be fully effective unless the amount hedged exceeds the net investment in the foreign operation, or the foreign operation is liquidated.

### **SHARE-BASED COMPENSATION**

We record share-based compensation expense for all share-based awards, including stock option grants, restricted stock and restricted stock unit awards and employee stock purchase plan purchases. We calculate share-based compensation expense using the straight-line approach based on awards expected to vest, which requires the use of an estimated forfeiture rate. Our estimated forfeiture rate is primarily based on historical experience, but may be revised in future periods if actual forfeitures differ from the estimate. We use the Black-Scholes option-pricing model to estimate the grant date fair value of our stock options and employee stock purchase plan purchases. This model requires the input of highly subjective assumptions, including the price volatility of the underlying stock, the expected term of our stock options, expected dividend yield, and the risk-free interest rate. We estimate the expected volatility of our stock options based on a combination of our stock's historical volatility and the implied volatilities from actively-traded options on our stock. We calculate the expected term of our stock options using historical stock option exercise data, and we add a slight premium to this expected term for employees who meet the definition of retirement-eligible pursuant to their grants during the contractual term of the grant. The expected dividend yield represents our annualized dividend in dollars divided by the stock price on the date of grant. The risk-free rate is derived from the U.S. Treasury yield curve in effect at the time of grant.

The fair value of our restricted stock and restricted stock unit awards represents the closing price of our common stock on the date of award.

In fiscal 2016, pursuant to the Merger Agreement for our acquisition of NexPlanar, we granted incentive stock options (ISOs), as allowed under our current Omnibus Incentive Plan, to certain NexPlanar employees in substitution for unvested ISOs they had held in NexPlanar at the time of the closing of the acquisition. We used the Black-Scholes option-pricing model to estimate the grant date fair value of these ISOs to calculate share-based compensation expense in fiscal 2016 and for future periods.

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**INDEX****ACCOUNTING FOR INCOME TAXES**

Current income taxes are determined based on estimated taxes payable or refundable on tax returns for the current year. Deferred income taxes are determined using enacted tax rates for the effect of temporary differences between the book and tax bases of recorded assets and liabilities. The effect on deferred tax assets and liabilities of changes in tax rates is recognized in income in the period that includes the enactment date. Provisions are made for both U.S. and any foreign deferred income tax liability or benefit. We assess whether or not our deferred tax assets will ultimately be realized and record an estimated valuation allowance on those deferred tax assets that may not be realized. We recognize the tax benefit of an uncertain tax position only if it is more likely than not that the tax position will be sustained by the taxing authorities, based on the technical merits of the position. In fiscal 2015, 2016 and 2017, we elected to permanently reinvest the earnings of all of our foreign subsidiaries. See the section titled "Liquidity and Capital Resources" in this MD&A and Note 17 of the "Notes to the Consolidated Financial Statements" of this Form 10-K for additional information on income taxes and permanent reinvestment.

**COMMITMENTS AND CONTINGENCIES**

We have entered into certain unconditional purchase obligations, which include noncancelable purchase commitments and take-or-pay arrangements with suppliers. We review our agreements on a quarterly basis and make an assessment of the likelihood of a shortfall in purchases and determine if it is necessary to record a liability. In addition, we are subject to the possibility of various loss contingencies arising in the ordinary course of business, such as a legal proceeding or claim. An estimated loss contingency is accrued when it is probable that an asset has been impaired or a liability has been incurred and the amount of the loss can be reasonably estimated. We regularly evaluate information available to us to determine whether such accruals should be adjusted and whether new accruals are required.

**EFFECTS OF RECENT ACCOUNTING PRONOUNCEMENTS**

See Note 2 to the Consolidated Financial Statements of this Form 10-K for a description of recent accounting pronouncements including the expected dates of adoption and effects on our results of operations, financial position and cash flows.

**RESULTS OF OPERATIONS**

The following table sets forth, for the periods indicated, the percentage of revenue of certain line items included in our historical statements of income:

	Year Ended September 30,		
	2017	2016	2015
Revenue	100.0%	100.0%	100.0%
Cost of goods sold	49.9	51.2	48.7
Gross profit	50.1	48.8	51.3
Research, development and technical	11.0	13.6	14.5
Selling and marketing	6.1	6.4	6.0
General and administrative	11.0	11.5	12.7
Operating income	22.1	17.3	18.1
Interest expense	0.9	1.1	1.1

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Other income, net	0.4	0.2	0.2
Income before income taxes	21.5	16.4	17.2
Provision for income taxes	4.4	2.5	3.6
Net income	17.1%	13.9%	13.6%

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YEAR ENDED SEPTEMBER 30, 2017, VERSUS YEAR ENDED SEPTEMBER 30, 2016

### REVENUE

Revenue was \$507.2 million in fiscal 2017, which represented an increase of 17.8%, or \$76.7 million, from fiscal 2016. The increase in revenue was driven by a \$58.0 million increase due to higher sales volume, a \$23.0 million increase due to product mix, and a \$1.9 million increase due to exchange rate fluctuations, partially offset by a \$6.1 million decrease due to price changes. Revenue from polishing pads, ESF, dielectrics slurries, and tungsten slurries increased 31.9%, 24.7%, 21.3%, and 19.5%, respectively, from fiscal 2016.

### COST OF GOODS SOLD

Total cost of goods sold was \$253.0 million in fiscal 2017, which represented an increase of 14.9%, or \$32.8 million, from fiscal 2016. The increase in cost of goods sold was primarily due to a \$17.2 million increase in fixed manufacturing costs, including costs related to our STIP, a \$15.8 million increase due to higher sales volume, a \$2.0 million increase due to foreign exchange fluctuations, a \$1.4 million increase due to higher logistics costs, and a \$1.2 million increase due to product mix, partially offset by a \$5.5 million decrease in other variable manufacturing costs. Fixed manufacturing costs in fiscal 2017 included \$4.8 million of NexPlanar amortization expense compared to \$4.5 million in fiscal 2016.

### GROSS PROFIT

Our gross profit as a percentage of revenue was 50.1% in fiscal 2017 compared to 48.8% for fiscal 2016. The increase in gross profit as a percentage of revenue from fiscal 2016 was primarily due to higher sales volume, a higher-valued product mix, and lower raw material costs, partially offset by higher fixed manufacturing costs, including costs associated with our STIP.

### RESEARCH, DEVELOPMENT AND TECHNICAL

Total research, development and technical expenses were \$55.7 million in fiscal 2017, which represented a decrease of 4.9%, or \$2.9 million, from fiscal 2016. The decrease was primarily due to \$1.1 million in lower clean room material costs, a \$1.0 million decrease due to the absence of an impairment charge recorded in fiscal 2016 for a NexPlanar intangible asset related to a technology asset, a \$0.9 million decrease for gains on sale of surplus research and development equipment, and \$0.7 million in lower depreciation and amortization expense, partially offset by \$1.8 million in higher staffing-related costs, including STIP costs.

Our research, development and technical efforts are focused on the following main areas:

Research related to fundamental CMP technology;  
Development of new and enhanced CMP consumable products, including collaboration on joint development projects with technology-leading customers and suppliers;  
Process development to support rapid and effective commercialization of new products;  
Technical support of CMP products in our customers' research, development and manufacturing facilities; and,  
Development of polishing and metrology applications outside of the semiconductor industry.

### SELLING AND MARKETING

Selling and marketing expenses were \$30.8 million in fiscal 2017, which represented an increase of 11.3%, or \$3.1 million, from fiscal 2016. The increase was primarily due to \$2.8 million in higher staffing-related costs, including STIP costs.

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### **GENERAL AND ADMINISTRATIVE**

General and administrative expenses were \$55.6 million in fiscal 2017, which represented an increase of 12.5%, or \$6.2 million, from fiscal 2016. The increase was primarily due to \$5.8 million in higher staffing-related costs, including STIP costs, and \$0.4 million in higher travel-related costs, partially offset by \$0.6 million in lower bad debt expense, primarily related to the absence of \$0.5 million for a customer placed into receivership in the fourth quarter of fiscal 2016.

### **INTEREST EXPENSE**

Interest expense was \$4.5 million in fiscal 2017, and was comparable to \$4.7 million in fiscal 2016.

### **OTHER INCOME, NET**

Other income was \$1.9 million in fiscal 2017, and increased \$1.3 million from fiscal 2016. The increase was primarily due to higher interest income earned on our cash and investment balances.

### **PROVISION FOR INCOME TAXES**

Our effective income tax rate was 20.5% in fiscal 2017 compared to 15.0% in fiscal 2016. The increase in the effective tax rate during fiscal 2017 was primarily due to the absence of the retroactive reinstatement of the research and experimentation tax credit recorded in fiscal 2016, and changes in the jurisdictional mix of income. See Note 17 of the "Notes to the Consolidated Financial Statements" for more information on our income tax provision. The effective tax rate for full fiscal year 2017 was below the Company's expected effective tax rate range of 21.0% to 22.0%. We currently expect our effective tax rate for full fiscal 2018 to be in the range of 24.0% to 27.0%; the expected increase from fiscal 2017 is due to the expiration of a tax holiday benefit in South Korea.

### **NET INCOME**

Net income was \$87.0 million in fiscal 2017, which represented an increase of 45.3%, or \$27.1 million, from fiscal 2016. The increase was primarily due to higher revenue and a higher gross profit margin, partially offset by a higher effective tax rate and higher operating expenses.

### **YEAR ENDED SEPTEMBER 30, 2016, VERSUS YEAR ENDED SEPTEMBER 30, 2015**

#### **REVENUE**

Revenue was \$430.4 million in fiscal 2016, which represented an increase of 3.9%, or \$16.4 million, from fiscal 2015. The increase in revenue was driven by a \$26.6 million increase due to favorable product mix, partially offset by a \$5.6 million decrease due to lower overall sales volume and a \$4.1 million decrease due to price changes. Revenue from polishing pads increased 62.5% from fiscal 2015, and included \$23.5 million from our NexPlanar acquisition. Revenue from tungsten slurries and dielectrics slurries increased 3.7% and 2.9%, respectively, from fiscal 2015. The decrease in overall sales volume was consistent with soft demand conditions seen in the global semiconductor



industry during the first half of fiscal 2016 and competitive dynamics within dielectrics and data storage applications.

#### COST OF GOODS SOLD

Total cost of goods sold was \$220.2 million in fiscal 2016, which represented an increase of 9.1%, or \$18.4 million, from fiscal 2015, which reflected the addition of NexPlanar. The increase in cost of goods sold was primarily due to a \$13.5 million increase due to higher fixed manufacturing costs, including \$4.5 million of NexPlanar amortization expense, a \$10.1 million increase due to higher variable manufacturing costs, including higher material costs, and a \$3.0 million increase due to product mix. These increases were partially offset by a \$5.0 million decrease due to lower costs related to material quality, a \$2.0 million decrease due to lower logistics costs, and a \$1.6 million decrease due to lower sales volume.

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### **GROSS PROFIT**

Our gross profit as a percentage of revenue was 48.8% in fiscal 2016 compared to 51.3% for fiscal 2015. The decrease in gross profit percentage from fiscal 2015 was primarily due to higher fixed manufacturing costs, including NexPlanar amortization expense and other NexPlanar costs, and higher material costs, partially offset by a higher-valued product mix, and lower STIP costs.

### **RESEARCH, DEVELOPMENT AND TECHNICAL**

Total research, development and technical expenses were \$58.5 million in fiscal 2016, which represented a decrease of 2.1%, or \$1.2 million, from fiscal 2015. The decrease was primarily due to \$3.0 million in lower clean room material costs and \$0.8 million in lower staffing-related costs, including costs associated with our STIP, partially offset by \$1.1 million in higher professional and service fees, including costs of joint development arrangements, and a \$1.0 million impairment of a NexPlanar intangible asset for certain in-process technology under development at the acquisition date.

### **SELLING AND MARKETING**

Selling and marketing expenses were \$27.7 million in fiscal 2016, which represented an increase of 10.9%, or \$2.7 million, from fiscal 2015. The increase was primarily due to \$1.8 million of NexPlanar amortization expense and \$0.9 million in higher product sample costs.

### **GENERAL AND ADMINISTRATIVE**

General and administrative expenses were \$49.4 million in fiscal 2016, which represented a decrease of 5.7%, or \$3.0 million, from fiscal 2015. The decrease was primarily due to \$6.1 million in lower staffing-related costs, including costs associated with our STIP and the absence of costs associated with a fiscal 2015 executive officer transition. This decrease was partially offset by \$0.8 million in higher professional fees, \$0.7 million in higher bad debt expense, including \$0.5 million for a customer placed into receivership in the fourth quarter of fiscal 2016, the absence of \$0.6 million of certain foreign goods and services tax credits recorded in fiscal 2015, and \$0.5 million in higher information technology costs. General and administrative expenses in fiscal 2016 included \$1.3 million of NexPlanar acquisition-related costs.

### **INTEREST EXPENSE**

Interest expense was \$4.7 million in fiscal 2016, and increased \$0.2 million from fiscal 2015. The increase was primarily due to higher variable interest rates on the portion of our outstanding debt on which we have not fixed the interest rate via interest rate swaps.

### **OTHER INCOME, NET**

Other income was \$0.7 million in both fiscal 2016 and fiscal 2015.

PROVISION FOR INCOME TAXES

Our effective income tax rate was 15.0% in fiscal 2016 compared to 21.1% in fiscal 2015. The decrease in the effective tax rate during fiscal 2016 was primarily due to the absence of income taxes incurred in the first quarter of fiscal 2015 related to the restructuring of our operations in Taiwan, the reinstatement of the research and experimentation tax credit in December 2015, and a \$0.9 million benefit related to domestic production deductions. This was partially offset by a change in the mix of earnings among various jurisdictions in which we operate, including a scheduled reduction in the benefit available under our tax holiday in South Korea from 100% to 50% of the statutory tax rate. See Note 17 of the "Notes to the Consolidated Financial Statements" for more information on our income tax provision.

**INDEX****NET INCOME**

Net income was \$59.8 million in fiscal 2016, which represented an increase of 6.6%, or \$3.7 million, from fiscal 2015. The increase was primarily due to higher revenue and a lower effective tax rate, partially offset by higher production costs.

**LIQUIDITY AND CAPITAL RESOURCES**

We had cash flows from operating activities of \$141.4 million in fiscal 2017, \$95.2 million in fiscal 2016 and \$98.2 million in fiscal 2015. Our cash provided by operating activities in fiscal 2017 represented \$126.0 million in net income plus non-cash items and a \$15.4 million increase in cash flow due to a net decrease in working capital. The increase in cash flows from operating activities from fiscal 2016 was primarily due to a significant increase in net income and changes in the timing and amount of accrued expense payments, including payments related to our STIP, partially offset by higher accounts receivable balances at September 30, 2017, due to an increase in revenue, compared to the same period in fiscal 2016. We accrued incentive compensation under our STIP at a much higher rate in fiscal 2017 than we recorded in fiscal 2016 based on performance against corporate goals. In addition, the cash incentive related to our performance against goals in fiscal 2016, which was paid in the first quarter of fiscal 2017, was \$8.4 million lower than the cash incentive payment related to our performance against goals in fiscal 2015, which was paid in the first quarter of fiscal 2016. The decrease in cash flow from operations in fiscal 2016 from fiscal 2015 was primarily due to increases in working capital, partially offset by higher net income and non-cash items. The increase in working capital included higher accounts receivable and lower accrued liabilities, including payments related to our STIP.

In fiscal 2017, cash flows used in investing activities were \$19.8 million, representing \$20.0 million in purchases of property, plant and equipment, net of \$1.2 million in proceeds from sales of property, plant and equipment, and cash inflows of \$0.2 million from other investing cash activity. In fiscal 2016, cash flows used in investing activities were \$144.4 million, representing \$127.0 million for the NexPlanar acquisition, which was net of \$15.3 million in cash acquired, and \$17.6 million for purchases of property, plant and equipment. We received \$0.2 million from other investing activities. In fiscal 2015, we used \$13.4 million in investing activities representing \$13.8 million in purchases of property plant and equipment, partially offset by \$0.4 million received from other investing activities. We currently estimate that our total capital expenditures in fiscal 2018 will be in the range of \$18.0 to \$22.0 million.

In fiscal 2017, cash flows used in financing activities were \$7.0 million. We paid \$19.0 million in dividends and dividend equivalents on our common stock. We used \$12.0 million to repurchase common stock under our share repurchase program and \$2.2 million to repurchase common stock pursuant to the terms of our Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan, as amended effective March 7, 2017 (OIP), for shares withheld from award recipients to cover payroll taxes on the vesting of restricted stock and restricted stock units granted under this plan. We also paid \$10.9 million to repay long-term debt. We received \$30.6 million in issuance of common stock related to the exercise of stock options granted under our Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan (EIP) and our OIP, and for the sale of shares to employees under our 2007 Employee Stock Purchase Plan, as amended and restated September 23, 2013 (ESPP), and we received \$6.5 million in tax benefits related to exercises of stock options and vesting of restricted stock and restricted stock units awarded under our EIP and OIP. In fiscal 2016, cash flows used in financing activities were \$24.4 million. We used \$26.0 million to repurchase common stock under our share repurchase program, and \$2.8 million to repurchase common stock pursuant to the terms of our EIP and our OIP for shares withheld from award recipients to cover payroll taxes on the vesting of restricted stock and restricted stock units awarded under these plans. We also used \$8.8 million to repay long-term debt, and we paid \$8.6 million in dividends on our common stock. We received \$19.5 million from the issuance of common stock related to the exercise of stock options granted under our EIP and our OIP and for the

sale of shares to employees under our ESPP, and we received \$2.3 million in tax benefits related to exercises of stock options and vesting of restricted stock and restricted stock units awarded under the EIP and OIP. In fiscal 2015, cash flows used in financing activities were \$9.0 million. We used \$40.0 million to repurchase common stock under our share repurchase program, and \$2.2 million to repurchase common stock pursuant to the terms of our EIP and OIP for shares withheld from award recipients to cover payroll taxes on the vesting of restricted stock and restricted stock units awarded under these plans. We also used \$8.8 million to repay long-term debt. We received \$35.8 million from the issuance of common stock related to the exercise of stock options granted under our EIP and our OIP and for the sale of shares to employees under our ESPP, and we received \$6.2 million in tax benefits related to exercises of stock options and vesting of restricted stock and restricted stock units awarded under these plans.

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In January 2016, our Board of Directors authorized an increase in the amount available under our share repurchase program from the previously remaining \$75.0 million to \$150.0 million. Under this program, we repurchased 167,809 shares for \$12.0 million in fiscal 2017, 636,839 shares for \$26.0 million in fiscal 2016, and 851,245 shares for \$40.0 million in fiscal 2015. As of September 30, 2017, \$122.0 million remains available under our share repurchase program. Share repurchases are made from time to time, depending on market conditions. The timing, manner, price and amounts of repurchases are determined at the Company's discretion, and the share repurchase program may be suspended, terminated or modified at any time for any reason. The repurchase program does not obligate the Company to acquire any specific number of shares. To date, we have funded share purchases under our share repurchase program from our available cash balance, and anticipate we will continue to do so. During fiscal years 2015, 2016 and 2017, we entered into "10b5-1" stock purchase plan agreements with independent brokers to repurchase shares of our common stock in accordance with guidelines pursuant to Rule 10b5-1 of the Securities Exchange Act of 1934, as amended. A plan under Rule 10b5-1 allows a company to repurchase its shares at times when it otherwise might be prevented from doing so under insider trading laws or because of self-imposed trading blackout periods. Repurchases are subject to SEC regulations as well as certain conditions specified in the plan.

In January 2016, we announced that our Board of Directors authorized the initiation of a regular dividend program under which the Company intends to pay quarterly cash dividends on our common stock. Pursuant to this announcement, our Board of Directors declared quarterly cash dividends of \$0.18 per share, during the second, third, and fourth quarters of fiscal 2016, and during the first quarter of fiscal 2017. In the second, third, and fourth quarters of fiscal 2017, our Board of Directors declared quarterly cash dividends of \$0.20 per share, the latest of which we paid on or about October 30, 2017 to shareholders of record as of September 25, 2017. The declaration and payment of future dividends is subject to the discretion and determination of the Company's Board of Directors and management, based on a variety of factors, and the program may be suspended, terminated or modified at any time for any reason.

We entered into a Credit Agreement in February 2012 and amended this Credit Agreement in June 2014. The amended Credit Agreement provided us with a \$175.0 million Term Loan and a \$100.0 million Revolving Credit Facility, with sub-limits for multicurrency borrowings, letters of credit, swing-line loans, as well as a \$100.0 million uncommitted accordion feature that allows us to request the existing lenders or, if necessary, third-party financial institutions, to provide additional capacity in the Revolving Credit Facility. The Term Loan and Revolving Credit Facility are referred to as the "Credit Facilities," and have a maturity date of June 27, 2019. The Term Loan has periodic scheduled principal repayments; however, we may prepay the loan without penalty. The Term Loan has \$144.4 million outstanding as of September 30, 2017, while the Revolving Credit Facility remains undrawn. The Credit Agreement contains covenants that restrict the ability of the Company and its subsidiaries to take certain actions, including, among other things and subject to certain significant exceptions and according to certain terms: creating liens, incurring indebtedness, making investments, engaging in mergers, selling property, paying dividends or amending organizational documents. The Credit Agreement requires us to comply with certain financial ratio maintenance covenants. These include a maximum consolidated leverage ratio of 2.75 to 1.00 and a minimum consolidated fixed charge coverage ratio of 1.25 to 1.00 through the expiration of the Credit Agreement. As of September 30, 2017, our consolidated leverage ratio was 0.91 to 1.00 and our consolidated fixed charge coverage ratio was 3.41 to 1.00. The Credit Agreement also contains customary affirmative covenants and events of default. We believe we are in compliance with these covenants. See Note 10 of the "Notes to the Consolidated Financial Statements" of this Form 10-K for additional information regarding the Credit Agreement.

As of September 30, 2017, we had \$397.9 million of cash and cash equivalents, \$233.4 million of which was held in foreign subsidiaries in Japan, the Netherlands, Singapore, South Korea and Taiwan where we have elected to permanently reinvest the earnings rather than repatriate the earnings to the U.S. See Part I, Item 1A entitled "Risk Factors" in this Form 10-K for additional discussion of our foreign operations.

We believe that our current balance of cash, cash generated by our operations, and available borrowing capacity under our Credit Facilities will be sufficient to fund our operations, expected capital expenditures, merger and acquisition activities, dividend payments, and share repurchases for at least the next twelve months. However, in pursuit of corporate development initiatives, we may need to raise additional funds in the future through equity or debt financing, strategic relationships or other arrangements. Depending on future conditions in the capital and credit markets, we could encounter difficulty securing additional financing in the type or amount necessary to pursue these objectives.

#### OFF-BALANCE SHEET ARRANGEMENTS

At September 30, 2017 and 2016, we did not have any unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which might have been established for the purpose of facilitating off-balance sheet arrangements.

**INDEX****TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS**

The following summarizes our contractual obligations at September 30, 2017, and the effect such obligations are expected to have on our liquidity and cash flow in future periods.

CONTRACTUAL OBLIGATIONS (In millions)	Total	Less Than			
		1 Year	1-3 Years	3-5 Years	After 5 Years
Long-term debt	\$144.4	\$10.9	\$133.5	\$-	\$-
Interest expense and fees on long-term debt	6.3	3.6	2.7	-	-
Purchase obligations	38.8	34.9	3.9	-	-
Operating leases	14.2	3.1	4.5	2.5	4.1
Severance agreements	3.9	3.7	0.2	-	-
Other long-term liabilities *	12.8	-	1.6	-	11.2
Total contractual obligations	\$220.4	\$56.2	\$146.4	\$2.5	\$15.3

\* We have excluded \$0.1 million in deferred tax liabilities from the other long-term liability amounts presented, as the deferred taxes that will be settled in cash are not known and the timing of any such payments is uncertain. We have also excluded \$0.3 million in deferred rent as the rent payments are included in the table above under the caption "Operating leases".

**INTEREST EXPENSE AND FEES ON LONG-TERM DEBT**

Interest payments on long-term debt reflect interest rates in effect at September 30, 2017. The interest payments reflect LIBOR rates currently in effect on \$72.2 million of our outstanding debt, and reflect fixed interest rates on \$72.2 million of outstanding debt for which we have executed interest rate swaps. Commitment fees are based on our estimated consolidated leverage ratio in future periods. See Note 10 of the "Notes to the Consolidated Financial Statements" of this Form 10-K for additional information regarding our long-term debt.

**PURCHASE OBLIGATIONS**

We have been operating under a multi-year supply agreement with Cabot Corporation, our former parent company which is not a related party and has not been one since 2002, for the purchase of fumed silica, the current term of which runs through December 31, 2019. As of calendar 2017, this agreement has provided us the option to purchase fumed silica, with minimum purchase requirements through 2018, for the term of the agreement, for which we will pay a fee of \$1.5 million in each of calendar years 2017, 2018 and 2019, of which the 2017 payment has already been made. The purchase obligations in the table above reflect management's expectation that we will meet our forecasted purchase quantities in calendar 2017 and beyond. Purchase obligations include an aggregate amount of \$9.7 million of contractual commitments related to our Cabot Corporation supply agreement for fumed silica. The \$1.5 million payment due in calendar year 2018 is included in accrued liabilities on our Consolidated Balance Sheet as of September 30, 2017, and the calendar 2019 payment is included in other long-term liabilities in the table above.

**OPERATING LEASES**

We lease certain vehicles, warehouse facilities, office space, machinery and equipment under cancelable and noncancelable operating leases, most of which expire within ten years of their respective commencement dates and may be renewed by us.



## SEVERANCE AGREEMENTS

Liabilities for severance agreements at September 30, 2017 represent payments to be made to former or to be former employees in accordance with individual agreements.

## OTHER LONG-TERM LIABILITIES

Other long-term liabilities at September 30, 2017 primarily consist of liabilities related to our foreign benefit plans in Japan and Korea, which represents approximately \$8.2 million, the \$1.5 million total contract fees noted above under "Purchase Obligations," our liability for future payments to be made under our Cabot Microelectronics Supplemental Employee Retirement Plan, and our liability for uncertain tax positions.

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### **ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

#### **EFFECT OF CURRENCY EXCHANGE RATES AND EXCHANGE RATE RISK MANAGEMENT**

We conduct business operations outside of the United States through our foreign operations. Some of our foreign operations maintain their accounting records in their local currencies. Consequently, period to period comparability of results of operations is affected by fluctuations in exchange rates. The primary currencies to which we have exposure are the Korean won, Japanese yen, and the New Taiwan dollar. Approximately 22% of our revenue is transacted in currencies other than the U.S. dollar. However, we also incur expenses in foreign countries that are transacted in currencies other than the U.S. dollar, which mitigates the exposure on the Consolidated Statement of Income. We periodically enter into forward contracts in an effort to manage foreign currency exchange exposure on our Consolidated Balance Sheet. However, we are unlikely to be able to hedge these exposures completely. We do not enter into forward contracts or other derivative instruments for speculative or trading purposes.

Fluctuations of the won, yen, and New Taiwan dollar have not had a material impact on our Consolidated Income Statement during fiscal years 2017 and 2016; however, the significant weakening of the Japanese yen against the U.S. dollar in fiscal year 2015 adversely affected our revenue. The weakening of the yen in fiscal year 2015 had a net favorable impact on our gross profit percentage, as our yen-denominated cost of goods sold was greater than our yen-denominated revenue. Fluctuations of the yen and won have had a significant impact on other comprehensive income on our Consolidated Balance Sheet. During fiscal year 2017, we recorded \$6.7 million in currency translation losses, net of tax, that are included in other comprehensive income. During fiscal year 2016, we recorded \$16.0 million in currency translation gains, net of tax, that are included in other comprehensive income. During fiscal 2015, we recorded \$14.1 million in currency translation losses, net of tax, that are included in other comprehensive income. These gains and losses primarily relate to changes in the U.S. dollar value of assets and liabilities denominated in local currencies when these asset and liability amounts are translated at month-end exchange rates.

In the fourth quarter of fiscal 2017, we entered into forward foreign exchange contracts in an effort to protect our net investment in a foreign operation against potential adverse changes resulting from foreign currency fluctuation. This transaction is designated as a net investment hedge and is accounted for under hedge accounting. In fiscal 2017, we recorded \$1.4 million in gross currency translation losses related to this hedge, which are included in the total \$6.7 million of total currency losses, net of tax, in other comprehensive income noted above.

#### **MARKET RISK AND SENSITIVITY ANALYSIS RELATED TO FOREIGN EXCHANGE RATE RISK**

We have performed a sensitivity analysis assuming a hypothetical 10% additional adverse movement in foreign exchange rates. As of September 30, 2017, the analysis demonstrated that such market movements would not have a material adverse effect on our consolidated financial position, results of operations or cash flows over a one-year period. Actual gains and losses in the future may differ materially from this analysis based on changes in the timing and amount of foreign currency rate movements and our actual exposures.

#### **INTEREST RATE RISK**

At September 30, 2017, we had \$144.4 million in long-term debt outstanding on our Term Loan. In fiscal 2015, we entered into interest rate swap agreements to hedge the variability in LIBOR-based interest rate payments on half of our outstanding debt. The notional amount of the swaps decreases each quarter by an amount in proportion to our scheduled quarterly principal repayment to maintain a fixed rate of interest on half of our outstanding debt. As of September 30, 2017, the fair value of this cash flow hedge was \$0.1 million. At September 30, 2017, we had \$72.2

million of outstanding debt at a variable rate of interest. Assuming a hypothetical 100 basis point increase in our current variable interest rate, our interest expense would increase by approximately \$0.2 million per quarter.

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**MARKET RISK RELATED TO INVESTMENTS IN AUCTION RATE SECURITIES**

At September 30, 2017, we owned two auction rate securities (ARS) with a total estimated fair value of \$4.9 million and par value of \$5.3 million which were classified as other long-term assets on our Consolidated Balance Sheet. Beginning in 2008, general uncertainties in the global credit markets significantly reduced liquidity in the ARS market, and this illiquidity continues. For more information on our ARS, see "Critical Accounting Policies and Estimates" in MD&A in Part II, Item 7, and Note 8 of the "Notes to the Consolidated Financial Statements" in Part II, Item 8 of this Form 10-K.

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ITEM 8. FINANCIAL STATEMENTS AND  
SUPPLEMENTARY DATA

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All other schedules are omitted, because they are not required, are not applicable, or the information is included in the consolidated financial statements and notes thereto.

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors of  
Cabot Microelectronics Corporation:

In our opinion, the consolidated financial statements listed in the accompanying index present fairly, in all material respects, the financial position of Cabot Microelectronics Corporation and its subsidiaries as of September 30, 2017 and September 30, 2016, and the results of their operations and their cash flows for each of the three years in the period ended September 30, 2017 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the accompanying index presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 30, 2017, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP  
Chicago, Illinois

November 15, 2017

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## CABOT MICROELECTRONICS CORPORATION

## CONSOLIDATED STATEMENTS OF INCOME

(In thousands, except per share amounts)

	Year Ended September 30,		
	2017	2016	2015
Revenue	\$ 507,179	\$ 430,449	\$ 414,097
Cost of goods sold	253,050	220,247	201,866
Gross profit	254,129	210,202	212,231
Operating expenses:			
Research, development and technical	55,658	58,532	59,778
Selling and marketing	30,846	27,717	24,983
General and administrative	55,637	49,445	52,430
Total operating expenses	142,141	135,694	137,191
Operating income	111,988	74,508	75,040
Interest expense	4,529	4,723	4,524
Other income, net	1,913	653	681
Income before income taxes	109,372	70,438	71,197
Provision for income taxes	22,420	10,589	15,051
Net income	\$ 86,952	\$ 59,849	\$ 56,146
Basic earnings per share	\$ 3.47	\$ 2.47	\$ 2.32
Weighted-average basic shares outstanding	25,015	24,077	24,040
Diluted earnings per share	\$ 3.40	\$ 2.43	\$ 2.26
Weighted-average diluted shares outstanding	25,512	24,477	24,632
Dividends per share	\$ 0.78	\$ 0.54	\$ -

The accompanying notes are an integral part of these consolidated financial statements.



**INDEX**CABOT MICROELECTRONICS CORPORATION  
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In thousands, except per share amounts)

	Year Ended September 30,		
	2017	2016	2015
Net income	\$86,952	\$59,849	\$56,146
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	(6,746 )	15,996	(14,126)
Minimum pension liability adjustment	276	(434 )	(318 )
Net unrealized gain (loss) on cash flow hedges	863	84	(901 )
Other comprehensive income (loss), net of tax	(5,607 )	15,646	(15,345)
Comprehensive income	\$81,345	\$75,495	\$40,801

The accompanying notes are an integral part of these consolidated financial statements.

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## CABOT MICROELECTRONICS CORPORATION

## CONSOLIDATED BALANCE SHEETS

(In thousands, except share and per share amounts)

	September 30,	
	2017	2016
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$397,890	\$287,479
Accounts receivable, less allowance for doubtful accounts of \$1,747 at September 30, 2017, and \$1,828 at September 30, 2016	64,793	62,830
Inventories	71,873	72,123
Prepaid expenses and other current assets	16,426	14,398
Total current assets	550,982	436,830
Property, plant and equipment, net	106,361	106,496
Goodwill	101,932	100,639
Other intangible assets, net	42,710	50,476
Deferred income taxes	21,598	20,747
Other long-term assets	10,517	12,042
Total assets	\$834,100	\$727,230
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$17,624	\$16,834
Current portion of long-term debt	10,938	7,656
Accrued expenses, income taxes payable and other current liabilities	62,651	41,395
Total current liabilities	91,213	65,885
Long-term debt, net of current portion, less prepaid debt issuance cost of \$441 at September 30, 2017 and \$696 at September 30, 2016	132,997	146,961
Deferred income taxes	63	75
Other long-term liabilities	14,790	16,661
Total liabilities	239,063	229,582
Commitments and contingencies (Note 18)		
Stockholders' equity:		
Common Stock: Authorized: 200,000,000 shares, \$0.001 par value; Issued: 35,230,742 shares at September 30, 2017, and 34,261,304 shares at September 30, 2016	35	34
Capital in excess of par value of common stock	580,938	530,840
Retained earnings	397,881	330,776
Accumulated other comprehensive income	3,949	9,556
Treasury stock at cost, 9,948,190 shares at September 30, 2017, and 9,744,642 shares at September 30, 2016	(387,766)	(373,558)
Total stockholders' equity	595,037	497,648
Total liabilities and stockholders' equity	\$834,100	\$727,230

The accompanying notes are an integral part of these consolidated financial statements.



**INDEX****CABOT MICROELECTRONICS CORPORATION  
CONSOLIDATED STATEMENTS OF CASH FLOWS**

(In thousands)

	Year Ended September 30,		
	2017	2016	2015
Cash flows from operating activities:			
Net income	\$86,952	\$59,849	\$56,146
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	25,930	26,031	18,719
Provision for doubtful accounts	26	588	(84 )
Share-based compensation expense	13,004	13,787	16,445
Deferred income tax expense (benefit)	392	(1,757 )	869
Non-cash foreign exchange (gain)/loss	435	(1,144 )	1,391
(Gain)/Loss on disposal of property, plant and equipment	(1,820 )	103	(28 )
Impairment of assets	860	1,079	-
Other	188	815	(524 )
Changes in operating assets and liabilities, excluding amounts related to acquisition:			
Accounts receivable	(3,986 )	(8,017 )	9,013
Inventories	(1,220 )	3,351	(8,290 )
Prepaid expenses and other assets	(1,576 )	3,935	(3,662 )
Accounts payable	892	(478 )	801
Accrued expenses, income taxes payable and other liabilities	21,292	(2,931 )	7,390
Net cash provided by operating activities	141,369	95,211	98,186
Cash flows from investing activities:			
Additions to property, plant and equipment	(21,174 )	(17,670 )	(13,812 )
Proceeds from the sale of property, plant and equipment	1,216	17	201
Acquisition of business, net of cash acquired	-	(126,976)	-
Proceeds from the sale of investments	175	200	202
Net cash used in investing activities	(19,783 )	(144,429)	(13,409 )
Cash flows from financing activities:			
Repayment of long-term debt	(10,938 )	(8,750 )	(8,750 )
Dividends paid	(19,041 )	(8,658 )	-
Repurchases of common stock	(14,208 )	(28,818 )	(42,247 )
Net proceeds from issuance of stock	30,615	19,512	35,782
Tax benefits associated with share-based compensation expense	6,557	2,305	6,207
Net cash used in financing activities	(7,015 )	(24,409 )	(9,008 )
Effect of exchange rate changes on cash			
Increase (decrease) in cash	(4,160 )	6,916	(5,734 )
Cash and cash equivalents at beginning of year	110,411	(66,711 )	70,035
Cash and cash equivalents at end of year	287,479	354,190	284,155
	\$397,890	\$287,479	\$354,190
Supplemental disclosure of cash flow information:			
Cash paid for income taxes	\$13,321	\$7,246	\$8,543
Cash paid for interest	\$4,128	\$4,307	\$4,107
Supplemental disclosure of non-cash investing and financing activities:			

Purchases of property, plant and equipment in accrued liabilities and accounts payable at the end of period	\$1,488	\$1,005	\$1,503
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The accompanying notes are an integral part of these consolidated financial statements.

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**CABOT MICROELECTRONICS CORPORATION**  
**CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY**

(In thousands)

	Common Stock	Capital In Excess Of Par	Retained Earnings	Accumulated Other Comprehensive Income	Treasury Stock	Total
Balance at September 30, 2014	\$ 32	\$437,266	\$227,942	\$ 9,255	\$(302,493)	\$372,002
Share-based compensation expense		16,445				16,445
Repurchases of common stock under share repurchase plans, at cost					(40,026 )	(40,026 )
Repurchases of common stock - other, at cost					(2,221 )	(2,221 )
Exercise of stock options	1	33,175				33,176
Issuance of Cabot Microelectronics restricted stock under Deposit Share Plan		23				23
Issuance of Cabot Microelectronics stock under Employee Stock Purchase Plan		2,583				2,583
Tax benefits from share-based compensation plans		6,181				6,181
Net income			56,146			56,146
Foreign currency translation adjustment				(14,126 )		(14,126 )
Interest rate swaps				(901 )		(901 )
Minimum pension liability adjustment				(318 )		(318 )
Balance at September 30, 2015	\$ 33	\$495,673	\$284,088	\$ (6,090 )	\$(344,740)	\$428,964
Share-based compensation expense		13,787				13,787
Repurchases of common stock under share repurchase plans, at cost					(25,980 )	(25,980 )
Repurchases of common stock - other, at cost					(2,838 )	(2,838 )
Exercise of stock options	1	16,623				16,624
Issuance of Cabot Microelectronics restricted stock under Deposit Share Plan		52				52
Issuance of Cabot Microelectronics stock under Employee Stock Purchase Plan		2,837				2,837
Tax benefits from share-based compensation plans		1,868				1,868
Net income			59,849			59,849
Dividends			(13,161 )			(13,161 )
Foreign currency translation adjustment				15,996		15,996
Interest rate swaps				84		84
Minimum pension liability adjustment				(434 )		(434 )
Balance at September 30, 2016	\$ 34	\$530,840	\$330,776	\$ 9,556	\$(373,558)	\$497,648
Share-based compensation expense		13,004				13,004

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Repurchases of common stock under share repurchase plans, at cost					(12,035 )	(12,035 )
Repurchases of common stock - other, at cost					(2,173 )	(2,173 )
Exercise of stock options	1	27,665				27,666
Issuance of Cabot Microelectronics stock under Employee Stock Purchase Plan		2,986				2,986
Tax benefits from share-based compensation plans		6,443				6,443
Net income			86,952			86,952
Dividends			(19,847 )			(19,847 )
Foreign currency translation adjustment				(6,746 )		(6,746 )
Interest rate swaps				863		863
Minimum pension liability adjustment				276		276
Balance at September 30, 2017	\$ 35	\$580,938	\$397,881	\$ 3,949	\$(387,766)	\$595,037

The accompanying notes are an integral part of these consolidated financial statements.

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### **CABOT MICROELECTRONICS CORPORATION NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

(In thousands, except share and per share amounts)

#### **1. BACKGROUND AND BASIS OF PRESENTATION**

Cabot Microelectronics Corporation ("Cabot Microelectronics", "the Company", "us", "we", or "our") supplies high-performance polishing slurries and pads used in the manufacture of advanced integrated circuit (IC) devices within the semiconductor industry, in a process called chemical mechanical planarization (CMP). CMP polishes surfaces at an atomic level, thereby helping to enable IC device manufacturers to produce smaller, faster and more complex IC devices with fewer defects. We develop, produce and sell CMP slurries for polishing many of the conducting and insulating materials used in IC devices. We develop, manufacture and sell CMP polishing pads, which are used in conjunction with slurries in the CMP process. We also develop and provide products for demanding surface modification applications in other industries through our Engineered Surface Finishes (ESF) business.

The audited consolidated financial statements have been prepared by us pursuant to the rules of the Securities and Exchange Commission (SEC) and accounting principles generally accepted in the United States of America (U.S. GAAP). We operate predominantly in one reportable segment - the development, manufacture, and sale of CMP consumables.

#### **2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

##### **PRINCIPLES OF CONSOLIDATION**

The consolidated financial statements include the accounts of Cabot Microelectronics and its subsidiaries. All intercompany transactions and balances between the companies have been eliminated in the consolidated financial statements as of September 30, 2017.

##### **USE OF ESTIMATES**

The preparation of financial statements and related disclosures in conformity with U.S. GAAP requires management to make judgments, assumptions and estimates that affect the amounts reported in the consolidated financial statements and accompanying notes. The accounting estimates that require management's most challenging and subjective judgments include, but are not limited to, those estimates related to bad debt expense, inventory valuation, valuation and classification of auction rate securities, impairment of long-lived assets and investments, business combinations, goodwill, other intangible assets, interest rate swaps, net investment hedge, share-based compensation, income taxes and contingencies. We base our estimates on historical experience, current conditions and on various other assumptions that we believe are reasonable under the circumstances. However, future events are subject to change and estimates and judgments routinely require adjustment. Actual results may differ from these estimates under different assumptions or conditions.

##### **CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS**

We consider investments in all highly liquid financial instruments with original maturities of three months or less to be cash equivalents. Short-term investments include securities generally having maturities of 90 days to one year. We did not own any securities that were considered short-term as of September 30, 2017 or 2016. See Note 4 for a more detailed discussion of other financial instruments.





**INDEX****ACCOUNTS RECEIVABLE AND ALLOWANCE FOR DOUBTFUL ACCOUNTS**

Trade accounts receivable are recorded at the invoiced amount and do not bear interest. We maintain an allowance for doubtful accounts for estimated losses resulting from the potential inability of our customers to make required payments. Our allowance for doubtful accounts is based on historical collection experience, adjusted for any specific known conditions or circumstances such as customer bankruptcies and increased risk due to economic conditions. Uncollectible account balances are charged against the allowance when we believe that it is probable that the receivable will not be recovered. Amounts charged to bad debt expense are recorded in general and administrative expenses. A portion of our receivables and the related allowance for doubtful accounts is denominated in foreign currencies, so they are subject to foreign exchange fluctuations which are included in the table below under deductions and adjustments.

Our allowance for doubtful accounts changed during the fiscal year ended September 30, 2017 as follows:

Balance as of September 30, 2016	\$1,828
Amounts charged to expense	26
Deductions and adjustments	(107 )
Balance as of September 30, 2017	\$1,747

**CONCENTRATION OF CREDIT RISK**

Financial instruments that subject us to concentrations of credit risk consist principally of accounts receivable. We perform ongoing credit evaluations of our customers' financial conditions and generally do not require collateral to secure accounts receivable. Our exposure to credit risk associated with nonpayment is affected principally by conditions or occurrences within the semiconductor industry and global economy. With the exception of one customer bankruptcy in fiscal 2012 and a customer placed into receivership in fiscal 2016, we have not experienced significant losses relating to accounts receivable from individual customers or groups of customers.

Customers who represented more than 10% of revenue are as follows:

	Year Ended September 30,		
	2017	2016	2015
Samsung Group (Samsung)	16%	15%	15%
Taiwan Semiconductor Manufacturing Co. (TSMC)	13%	15%	18%
Micron Technology Inc.	10%	*	*

\* Not a customer with more than 10% revenue in fiscal 2016 and 2015.

TSMC accounted for 12.2% and 12.9% of net accounts receivable at September 30, 2017 and 2016, respectively. Samsung accounted for 11.9% and 8.3% of net accounts receivable at September 30, 2017 and 2016, respectively. Micron accounted for 10.7% and 7.2% of net accounts receivable at September 30, 2017 and 2016, respectively.

Due to recent financial challenges experienced by Toshiba, we continue to monitor their financial condition and ability to make the required payments due on our receivables. At September 30, 2017 our accounts receivable balance with Toshiba represented a U.S. dollar equivalent of \$2,323, which equates to 3.6% of our total accounts receivable

balance of \$64,793, net of allowance for doubtful accounts, and of which no amounts are past due. At present, we do not believe it is probable that the receivables from Toshiba are impaired, and accordingly, we have not recorded a related allowance for doubtful accounts.

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### **FAIR VALUES OF FINANCIAL INSTRUMENTS**

The recorded amounts of cash, accounts receivable, and accounts payable approximate their fair values due to their short-term, highly liquid characteristics. See Note 4 for a more detailed discussion of the fair value of financial instruments.

### **INVENTORIES**

Inventories are stated at the lower of cost, determined on the first-in, first-out (FIFO) basis, or market. Finished goods and work in process inventories include material, labor and manufacturing overhead costs. We regularly review and write down the value of inventory as required for estimated obsolescence or lack of marketability. An inventory reserve is maintained based upon a historical percentage of actual inventories written off and applied against inventory value at the end of the period, adjusted for known conditions and circumstances.

### **PROPERTY, PLANT AND EQUIPMENT**

Property, plant and equipment are recorded at cost. Depreciation is based on the following estimated useful lives of the assets using the straight-line method:

Buildings	15-25 years
Machinery and equipment	3-10 years
Furniture and fixtures	5-10 years
Information systems	3-5 years

Expenditures for repairs and maintenance are charged to expense as incurred. Expenditures for major renewals and betterments are capitalized and depreciated over the remaining useful lives. As assets are retired or sold, the related cost and accumulated depreciation are removed from the accounts and any resulting gain or loss is included in the results of operations. We capitalize the costs related to the design and development of software used for internal purposes; however, these costs are not material.

### **IMPAIRMENT OF LONG-LIVED ASSETS**

Reviews are regularly performed to determine whether facts and circumstances exist that indicate the carrying amount of assets may not be recoverable or the useful life is shorter than originally estimated. Asset recoverability assessment begins by comparing the projected undiscounted cash flows associated with the related asset or group of assets over their remaining lives against their respective carrying amounts. Impairment, if any, is based on the excess of the carrying amount over the fair value of those assets. If assets are determined to be recoverable, but their useful lives are shorter than originally estimated, the net book value of the asset is depreciated over the newly determined remaining useful life. We recorded impairment expense on a certain long-lived asset of \$860 in fiscal year 2017, which was subsequently sold for a gain. We did not record any impairment expense on property, plant and equipment in fiscal 2016 and 2015. See Note 6 for more information regarding impairment.

### **WARRANTY RESERVE**

We maintain a warranty reserve that reflects management's best estimate of the cost to replace product that does not meet our specifications and customers' performance requirements. The warranty reserve is based upon a historical product return rate, adjusted for any specific known conditions or circumstances. Adjustments to the warranty reserve are recorded in cost of goods sold.



**INDEX****GOODWILL AND INTANGIBLE ASSETS**

We amortize intangible assets with finite lives over their estimated useful lives, which range from one to eleven years. Intangible assets with finite lives are reviewed for impairment using a process similar to that used to evaluate other long-lived assets. Goodwill and indefinite-lived intangible assets are not amortized and are tested annually in the fourth fiscal quarter, or more frequently if indicators of potential impairment exist, using a fair-value-based approach. The recoverability of goodwill is measured at the reporting unit level, which is defined as either an operating segment or one level below an operating segment, referred to as a component. A component is a reporting unit when the component constitutes a business for which discrete financial information is available and segment management regularly reviews the operating results of the component. Components may be combined into one reporting unit when they have similar economic characteristics. We have four reporting units, all of which have goodwill as of September 30, 2017. Goodwill impairment testing requires a comparison of the fair value of each reporting unit to the carrying value. If the carrying value exceeds fair value, then the fair value of the assets and liabilities for the reporting unit is used to determine the "implied" fair value of goodwill. The amount of the impairment is the difference between the carrying value and the implied fair value of goodwill. Accounting guidance provides an entity the option to assess the fair value of a reporting unit either using a qualitative analysis ("step zero") or a quantitative analysis ("step one"). In fiscal 2015, 2016 and 2017, we chose to use a step one analysis for goodwill impairment. Similarly, an entity has the option to use a step zero or step one approach to determine the recoverability of indefinite-lived intangible assets. In fiscal 2015, 2016 and 2017, we used a step one analysis to determine the recoverability of indefinite-lived intangible assets. As discussed in more detail in Note 3, we recorded \$1,000 in impairment expense on an in-process technology asset during the fourth quarter of fiscal 2016. We determined that goodwill and the other intangible assets were not impaired as of September 30, 2017.

**FOREIGN CURRENCY TRANSLATION**

Certain operating activities in Asia and Europe are denominated in local currency, considered to be the functional currency. Assets and liabilities of these operations are translated using exchange rates in effect at the end of the year, and revenue and costs are translated using average exchange rates for the year. The related translation adjustments are reported in comprehensive income in stockholders' equity.

**FOREIGN EXCHANGE MANAGEMENT**

We transact business in various foreign currencies, primarily the Japanese yen, New Taiwan dollar and Korean won. Our exposure to foreign currency exchange risks has not been significant because a large portion of our business is denominated in U.S. dollars. However, there was a weakening of the Japanese yen against the U.S. dollar during fiscal years 2015, 2016 and part of 2017, which had some net positive impact on our gross margin percentage and our net income. Periodically, we enter into certain forward foreign exchange contracts in an effort to mitigate the risks associated with currency fluctuations on certain foreign currency balance sheet exposures. These foreign exchange contracts do not qualify for hedge accounting; therefore, the gains and losses resulting from the impact of currency exchange rate movements on our forward foreign exchange contracts are recognized as other income or expense in the accompanying consolidated income statements in the period in which the exchange rates change. See Note 11 for a discussion of derivative financial instruments.

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### INTEREST RATE SWAPS

In fiscal 2015, we entered into floating-to-fixed interest rate swap agreements to hedge the variability in LIBOR-based interest payments on a portion of our outstanding variable rate debt. The fair value of our interest rate swaps is estimated using standard valuation models using market-based observable inputs over the contractual term, including one-month LIBOR-based yield curves, among others. We consider the risk of nonperformance, including counterparty credit risk, in the calculation of the fair value. We have designated these swap agreements as cash flow hedges pursuant to ASC 815, "Derivatives and Hedging". As cash flow hedges, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swaps and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of accumulated other comprehensive income or loss, while the ineffective portion is recorded as a component of interest expense. Changes in the method by which we pay interest from one-month LIBOR to another rate of interest could create ineffectiveness in the swaps, and result in amounts being reclassified from other comprehensive income into net income. Hedge effectiveness is tested quarterly to determine if hedge treatment is appropriate.

### NET INVESTMENT HEDGE

In the fourth quarter of fiscal 2017, we entered into forward foreign exchange contracts in an effort to protect our net investment in a foreign operation against potential adverse changes resulting from foreign currency fluctuation. This transaction is designated as a net investment hedge and accounted for under hedge accounting. The fair value of our forward foreign exchange contracts is estimated using a standard valuation model and market-based observable inputs over the contractual term, including forward rates and/or the Overnight Index Swap (OIS) curve as of the valuation date. Unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Hedge effectiveness is assessed using the Forward Method, consistent with guidance in ASC 815. Consistent with this guidance, the entire change in fair value of the forward contracts is recorded in the same manner as the related currency translation adjustments, within other comprehensive income, as the hedging instruments are expected to be fully effective unless the amount hedged exceeds the net investment in the foreign operation, or the foreign operation is liquidated. As these contracts will settle on September 26, 2022 and there are no periodic settlements, we recorded the liability in other long-term liabilities on our Consolidated Balance Sheets as of September 30, 2017. See Note 11 for a discussion of derivative financial instruments.

### INTERCOMPANY LOAN ACCOUNTING

We maintain an intercompany loan agreement with our wholly-owned subsidiary, Nihon Cabot Microelectronics K.K. ("Nihon"), under which we provided funds to Nihon to finance the purchase of certain assets from our former Japanese branch at the time of the establishment of this subsidiary, for the purchase of land adjacent to our facility in Geino, Japan, for the construction of our Asia Pacific technology center, and for the purchase of a 300 millimeter polishing tool and related metrology equipment, all of which are assets of Nihon, as well as for general business purposes. Since settlement of the note is expected in the foreseeable future, and our subsidiary has made timely payments on the loan, the loan is considered a foreign-currency transaction. Therefore, the associated foreign exchange gains and losses are recognized as other income or expense rather than being deferred in the cumulative translation account in other comprehensive income.

We also maintain an intercompany loan between two of our wholly-owned foreign subsidiaries, from Cabot Microelectronics Singapore Pte. Ltd. to Hanguk Cabot Microelectronics, LLC in South Korea. This loan provided funds for the construction and operation of our research, development and manufacturing facility in South Korea. This loan is also considered a foreign currency transaction and is accounted for in the same manner as our

intercompany loan to Nihon.

These intercompany loans are eliminated from our Consolidated Balance Sheet in consolidation.

#### PURCHASE COMMITMENTS

We have entered into unconditional purchase obligations, which include noncancelable purchase commitments and take-or-pay arrangements with suppliers. On an ongoing basis, we review our agreements and assess the likelihood of a shortfall in purchases and determine if it is necessary to record a liability. See Note 18 for additional discussion of purchase commitments. To date, we have not recorded such a liability.



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### **REVENUE RECOGNITION**

Revenue from CMP consumables products is recognized when title is transferred to the customer, assuming all revenue recognition criteria are met. Title transfer generally occurs upon shipment to the customer or when inventory held on consignment is consumed by the customer, subject to the terms and conditions of the particular customer arrangement. We have consignment agreements with a number of our customers that require, at a minimum, monthly consumption reports that enable us to record revenue and inventory usage in the appropriate period.

Although the majority of our products are sold directly, we market some of our products through distributors in certain areas of the world. We recognize revenue upon shipment and when title is transferred to the distributor. We do not have any arrangements with distributors that include payment terms, rights of return, or rights of exchange outside the ordinary course of business, or any other significant matters that we believe would impact the timing of revenue recognition.

Within our Engineered Surface Finishes (ESF) business, sales of equipment are recorded as revenue upon delivery and customer acceptance. Amounts allocated to installation and training are deferred until those services are provided and are not material.

Revenues are reported net of any value-added tax or other such tax assessed by a governmental authority on our revenue-producing activities.

### **SHIPPING AND HANDLING**

Costs related to shipping and handling are included in cost of goods sold.

### **RESEARCH, DEVELOPMENT AND TECHNICAL**

Research, development and technical costs are expensed as incurred and consist primarily of staffing costs, materials and supplies, depreciation, utilities and other facilities costs.

### **INCOME TAXES**

Current income taxes are determined based on estimated taxes payable or refundable on tax returns for the current year. Deferred income taxes are determined based on differences between the book and tax bases of recorded assets and liabilities, using enacted tax rates. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Provisions are made for both U.S. and any foreign deferred income tax liability or benefit. We assess whether our deferred tax assets will ultimately be realized and record an estimated valuation allowance on those deferred tax assets that may not be realized. We recognize the tax benefit of an uncertain tax position only if it is more likely than not that the tax position will be sustained by the taxing authorities, based on the technical merits of the position. In fiscal years 2015, 2016 and 2017 we elected to permanently reinvest the earnings of all of our foreign subsidiaries rather than repatriate the earnings to the U.S. See Note 17 for additional information on income taxes.

### **SHARE-BASED COMPENSATION**

We record share-based compensation expense for all share-based awards, including stock option grants, restricted stock and restricted stock unit awards and employee stock purchase plan purchases. We calculate share-based compensation expense using the straight-line approach based on awards expected to vest, which requires the use of an estimated forfeiture rate. Our estimated forfeiture rate is primarily based on historical experience, but may be revised in future periods if actual forfeitures differ from the estimate. We use the Black-Scholes option-pricing model to

estimate the grant date fair value of our stock options and employee stock purchase plan purchases. This model requires the input of highly subjective assumptions, including the price volatility of the underlying stock, the expected term of our stock options, expected dividend yield, and the risk-free interest rate. We estimate the expected volatility of our stock options based on a combination of our stock's historical volatility and the implied volatilities from actively-traded options on our stock. We calculate the expected term of our stock options using historical stock option exercise data, and we add a slight premium to this expected term for employees who meet the definition of retirement eligible pursuant to their grants during the contractual term of the grant. The expected dividend yield represents our annualized dividend in dollars divided by the stock price on the date of grant. The risk-free rate is derived from the U.S. Treasury yield curve in effect at the time of grant.

The fair value of our restricted stock and restricted stock unit awards represents the closing price of our common stock on the date of award.

For additional information regarding our share-based compensation plans, refer to Note 13.

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### **EARNINGS PER SHARE**

Basic earnings per share (EPS) is calculated by dividing net income available to common stockholders by the weighted-average number of common shares outstanding during the period, excluding the effects of unvested restricted stock awards with a right to receive non-forfeitable dividends, which are considered participating securities as prescribed by the two class method under ASC Topic 260, Earnings Per Share (ASC 260). Diluted EPS is calculated in a similar manner, but the weighted-average number of common shares outstanding during the period is increased to include the weighted-average dilutive effect of "in-the-money" stock options and unvested restricted stock shares using the treasury stock method.

### **COMPREHENSIVE INCOME**

Comprehensive income primarily differs from net income due to foreign currency translation adjustments.

### **EFFECTS OF RECENT ACCOUNTING PRONOUNCEMENTS**

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers" (Topic 606), an updated standard on revenue recognition. ASU 2014-09 provides enhancements to how revenue is reported and improves comparability in the financial statements of companies reporting using IFRS and US GAAP. The core principle of the new standard is for companies to recognize revenue for goods or services in amounts that reflect the consideration to which the company expects to be entitled in exchange for those goods or services. The new standard is intended to enhance disclosures about revenue, provide guidance for transactions that were not previously addressed comprehensively, such as service revenue and contract modifications, and improve guidance for multiple-element arrangements. In August 2015, the FASB issued ASU No. 2015-14, "Deferral of Effective Date" (Topic 606). This standard defers the effective date of ASU 2014-09 by one year. ASU 2014-09 will be effective for us beginning October 1, 2018, and may be applied on a full retrospective or modified retrospective approach. In March 2016, the FASB issued ASU No. 2016-08, "Principal versus Agent Considerations (Reporting Revenue Gross versus Net)" (Topic 606). ASU 2016-08 provides clarification for the implementation guidance on principal versus agent considerations. In April 2016, the FASB issued ASU No. 2016-10, ASU No. 2016-11, and ASU 2016-12, and ASU 2017-13 issued in September 2017, all of which provide additional clarification of the original revenue standard. We are working to identify potential differences that would result from applying the requirements of the new standard to our revenue contracts, and identify and implement changes to business processes, systems and controls to support recognition and disclosure under the new standard. We anticipate any changes to revenue recognition for our Company are likely to be related to certain pricing and incentive arrangements with our customers within our CMP consumables business, but we believe the recognition of revenue will remain substantially unchanged for the majority of our contracts with customers. We anticipate we will use the modified retrospective approach to adoption, which will require us to record the cumulative effect of adopting the standard as an adjustment to the beginning balance of retained earnings. We continue to evaluate the impact of the implementation of these standards on our financial statements.

In July 2015, the FASB issued ASU No. 2015-11, "Simplifying the Measurement of Inventory" (Topic 330). The provisions of ASU 2015-11 require an entity to measure inventory at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. ASU 2015-11 will be effective for us beginning October 1, 2017, but early adoption is permitted. We do not believe the adoption of this standard will have a material effect on our financial statements.

In January 2016, the FASB issued ASU No. 2016-01, "Recognition and Measurement of Financial Assets and Financial Liabilities" (Subtopic 825-10). The provision of ASU 2016-01 requires equity investments, other than those accounted for under the equity method of accounting or those that result in consolidation, to be measured at fair value

with changes in fair value recognized in net income. ASU 2016-01 simplifies the impairment assessment of equity securities by permitting a qualitative assessment each reporting period, and makes changes to presentation and disclosure of certain classes of financial assets and liabilities. ASU 2016-01 will be effective for us beginning October 1, 2018, but early adoption is permitted. We are currently evaluating the impact of implementation of this standard on our financial statements.

In February 2016, the FASB issued ASU No. 2016-02, "Leases" (Topic 842). The provisions of ASU 2016-02 require a dual approach for lessee accounting under which a lessee would recognize a right-of-use asset and a corresponding lease liability. Leases will be classified as either finance or operating leases. For finance leases, a lessee will recognize interest expense and amortization of the right-of-use asset, and for operating leases, the lessee will recognize a straight-line total lease expense. The guidance also requires qualitative and specific quantitative disclosures to supplement the amounts recorded in the financial statements, to afford better understanding of an entity's leasing activities, including any significant judgments and estimates. ASU 2016-02 will be effective for us beginning October 1, 2019, but early adoption is permitted. We are currently evaluating the impact of implementation of this standard on our financial statements.

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In March 2016, the FASB issued ASU No. 2016-05, "Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships" (Topic 815). The provisions of ASU 2016-05 provide clarification that a change in a counterparty of a derivative instrument that has been designated as a hedging instrument does not require dedesignation of that hedging relationship, provided that all other hedge accounting criteria is met. ASU 2016-05 will be effective for us beginning October 1, 2018, but early adoption is permitted. We do not believe the adoption of this standard will have a material effect on our financial statements.

In March 2016, the FASB issued ASU No. 2016-07, "Simplifying the Transition to the Equity Method of Accounting" (Topic 323). The provisions of ASU 2016-07 require equity method investors to add the cost of acquiring additional interest in the investee to the current basis of the investor's previously held interest and adopt the equity method prospectively as of the date the investment qualifies for the equity method of accounting. ASU 2016-07 will be effective for us beginning October 1, 2018, but early adoption is permitted. We do not believe the adoption of this standard will have a material effect on our financial statements as we currently have no equity method investments.

In March 2016, the FASB issued ASU No. 2016-09, "Improvements to Employee Share Based Payment Accounting" (Topic 718). The provisions of this standard involve several aspects of the accounting for share-based payments transactions, including income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. ASU 2016-09 will be effective for us beginning October 1, 2017, but early adoption is permitted. We currently expect that the adoption of this standard will introduce additional variability in our effective tax rate; however, the impact will not be known until the related share-based award activity occurs. The adoption will also impact the classification of excess tax benefits on the Consolidated Statements of Cash Flows.

In June 2016, the FASB issued ASU No. 2016-13, "Measurement of Credit Losses on Financial Instruments" (Topic 326). The provisions of this standard require financial assets measured at amortized cost to be presented at the net amount expected to be collected. An allowance account would be established to present the net carrying value at the amount expected to be collected. ASU 2016-13 also provides that credit losses relating to available-for-sale debt securities should be recorded through an allowance for credit losses. ASU 2016-13 will be effective for us beginning October 1, 2020, but early adoption is permitted as of October 1, 2019. We are currently evaluating the impact of implementation of this standard on our financial statements.

In August 2016, the FASB issued ASU No. 2016-15 "Classification of Certain Cash Receipts and Cash Payments" (Topic 230). The provisions of this standard provide guidance on the classification within the statement of cash flows of certain types of cash receipts and cash payments in an effort to eliminate diversity in practice. ASU 2016-15 will be effective for us beginning October 1, 2018, but early adoption is permitted. We do not believe the adoption of this standard will have a material effect on our financial statements as we currently do not have any of the cash receipts or payments discussed in this standard.

In October 2016, the FASB issued ASU No. 2016-16 "Intra-Entity Transfers of Assets Other Than Inventory" (Topic 740). The provisions of this standard provide guidance on recognition of taxes related to intra-entity transfer of assets other than inventory when the transfer occurs. ASU 2016-16 will be effective for us beginning October 1, 2018, but early adoption is permitted. We are currently evaluating the impact of implementation of this standard on our financial statements.

In October 2016, the FASB issued ASU No. 2016-17 "Interest Held through Related Parties That Are under Common Control" (Topic 810). The provisions of this standard provide further guidance related to ASU 2015-02, and also provide guidance on consolidation in relation to VIEs and related parties. ASU 2016-17 will be effective for us beginning October 1, 2017, but early adoption is permitted. We do not believe the adoption of this standard will have a material effect on our financial statements as we currently have no interest in any entities that may be considered VIE.

In January 2017, the FASB issued ASU No. 2017-01 "Clarifying the Definition of a Business" (Topic 805). The provisions of this standard provide guidance to determine whether the acquisition or sale of a set of assets or activities constitutes a business. The standard requires that an integrated set of assets and activities include an input and a substantive process that together contribute to the ability to create output. ASU 2017-01 will be effective for us beginning October 1, 2017, and early adoption is permitted under specified conditions. We do not believe the adoption of this standard will have a material effect on our financial statements.

In January 2017, the FASB issued ASU No. 2017-04 "Simplifying the Test for Goodwill Impairment" (Topic 350). The provisions of this standard eliminate Step 2 from the goodwill impairment test, which required an entity to determine the fair value of its assets and liabilities at the impairment testing date of its goodwill and compare it to its carrying amount to determine a possible impairment loss. Goodwill impairment testing will now be done by comparing the fair value of a reporting unit and its carrying amount. ASU 2017-04 will be effective for us beginning October 1, 2020, but early adoption is permitted as of October 1, 2017. We are currently evaluating the impact of implementation of this standard on our financial statements.

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In March 2017, the FASB issued ASU No. 2017-07 "Improving the Presentation of Net Period Pension Cost and Net Period Postretirement Benefit Cost" (Topic 715). The provisions of ASU 2017-07 provided specific guidance on the presentation of the components of net benefit cost. ASU 2017-07 will be effective for us beginning October 1, 2018. We are currently evaluating the impact of implementation of this standard on our financial statements.

In May 2017, the FASB issued ASU No. 2017-09 "Scope of Modification Accounting" (Topic 718). The provisions of ASU 2017-09 provide specific guidance about which changes to the term or conditions of a share-based payment require an entity to apply modification accounting. ASU 2017-09 will be effective for us beginning October 1, 2018. We are currently evaluating the impact of implementation of this standard on our financial statements.

In August 2017, the FASB issued ASU No. 2017-12 "Derivatives and Hedging" (Topic 815). The provisions of this standard amend the hedge accounting model in ASC 815 to expand an entity's ability to hedge nonfinancial and financial risk components, reduce complexity in fair value hedges of interest rate risk, eliminate the requirement to separately measure and report hedge ineffectiveness, and generally require the entire change in the fair value of a hedging instrument to be presented in the same income statement line as the hedged item. The guidance also eases certain documentation and assessment requirements and modifies the accounting for components excluded from the assessment of hedge effectiveness. ASU 2017-09 will be effective for us beginning October 1, 2019, but early adoption is permitted. We are currently evaluating the impact of implementation of this standard on our financial statements.

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**INDEX****3. BUSINESS COMBINATION**

On October 22, 2015, the Company completed the acquisition of 100% of the outstanding stock of NexPlanar Corporation (NexPlanar), which was a privately held, U.S. based company that specialized in the development, manufacture and sale of advanced CMP pad solutions for the semiconductor industry. We acquired NexPlanar to expand our polishing pad portfolio by adding a complementary pad technology for which we believe we can leverage our global infrastructure to better serve customers on a global basis, including offering performance-advantaged slurry and pad consumable sets. We paid a total of \$126,976, including total purchase consideration of \$142,237, less cash acquired of \$15,261. The purchase consideration includes \$142,167 paid at the date of acquisition and \$70 for a post-closing adjustment. In addition, we paid \$154 in compensation expense related to certain unvested NexPlanar stock options settled in cash at the acquisition date.

The following table summarizes the fair values of assets acquired and liabilities assumed as of the date of acquisition:

Total purchase consideration	\$ 142,237
Cash	\$ 15,261
Accounts receivable	3,052
Inventories	2,768
Prepaid expenses and other current assets	1,712
Property, plant and equipment	6,901
Intangible assets	55,000
Deferred tax assets	20,509
Other long-term assets	1,458
Accounts payable	(1,057 )
Accrued expenses and other current liabilities	(1,472 )
Deferred tax liabilities	(20,313 )
Total identifiable net assets	83,819
Goodwill	58,418
	\$ 142,237

The acquisition was accounted for using the acquisition method of accounting. Tangible and identifiable intangible assets acquired and liabilities assumed are recorded at fair value as of the acquisition date. We finalized the purchase price allocation during the fourth quarter of fiscal 2016. We believe that the information we used provides a reasonable basis for estimating the fair values of assets acquired and liabilities assumed.

The fair values of identifiable assets and liabilities acquired were developed with the assistance of third party valuation firms. The fair value of acquired property, plant and equipment is valued at its "value-in-use" as there are no known plans to dispose of any assets. The fair value of acquired identifiable intangible assets was determined using the "income approach" on an individual asset basis. The key assumptions used in the calculation of the discounted cash flows include projected revenue, gross margin, operating expenses, and discount rate. The valuations and the underlying assumptions have been deemed reasonable by Company management. There are inherent uncertainties and management judgment required in these determinations.



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The following table sets forth the components of identifiable intangible assets acquired and their estimated useful lives as of the date of acquisition:

	Fair Value	Useful Life
Trade name	\$8,000	7 years
Customer relationships	8,000	11 years
Developed technology - product family A	32,000	7 years
Developed technology - product family B	2,000	9 years
In-process technology	5,000	
Total intangible assets	\$55,000	

The trade name represents the estimated fair value of the brand and name recognition associated with the marketing of NexPlanar's product offerings. Customer relationships represent the estimated fair value of the underlying relationships and agreements with NexPlanar customers. Developed technology represents the estimated fair value of NexPlanar's technology, processes and knowledge regarding its product offerings. In-process technology represents the fair value assigned to technology projects under development as of the acquisition date. The in-process technology assets are capitalized and accounted for as indefinite-lived intangible assets and will be subject to impairment testing until completion or abandonment of the projects. Upon successful completion of each project, we will make a determination of the appropriate useful life and the related amortization will be recorded as an expense over the estimated useful life based on the future expected cash flow stream. In the fourth quarter of fiscal 2016, we recorded impairment expense of \$1,000 representing the entire fair value of one of the in-process technology assets as management determined that expected future cash flows were insufficient to support the value of the asset. The intangible assets subject to amortization have a weighted average useful life of 7.7 years and are being amortized on a straight-line basis.

The excess of purchase consideration over the fair value of net assets acquired was recorded as goodwill, and is not deductible for income tax purposes. The goodwill is primarily attributable to anticipated revenue growth from the combination of our and NexPlanar pad technologies, expected synergies from the combined operations, and the assembled workforce of NexPlanar. NexPlanar's results of operations have been included in our unaudited consolidated statements of income and comprehensive income from the date of acquisition.

The following supplemental pro forma information summarizes the combined results of operations for Cabot Microelectronics and NexPlanar as if the acquisition had occurred on October 1, 2014.

	Year Ended	
	September 30, 2016	2015
Revenues	\$431,856	\$437,326
Net income	60,620	46,928
Earnings per share - basic	2.50	1.93
Earnings per share - diluted	\$2.46	\$1.89

The historical financial information has been adjusted to give effect to the pro forma adjustments, which consist of amortization expense associated with intangible assets, and the elimination of interest expense on NexPlanar debt repaid prior to the acquisition. The pro forma amounts for the years ended September 30, 2016 and 2015 exclude the

impact of compensation expense related to unvested NexPlanar stock options settled in cash, and the step-up of inventory as these items are assumed to have occurred during the quarter ended December 31, 2014 had the acquisition been completed on October 1, 2014. The pro forma consolidated results are not necessarily indicative of what the consolidated results actually would have been had the acquisition been completed on October 1, 2014. The pro forma consolidated results do not purport to project future results of combined operations, nor do they reflect the expected realization of any revenue or cost synergies associated with the acquisition.

**INDEX****4. FAIR VALUE OF FINANCIAL INSTRUMENTS**

Fair value is defined as the price that would be received from the sale of an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The FASB established a three-level hierarchy for disclosure based on the extent and level of judgment used to estimate fair value. Level 1 inputs consist of valuations based on quoted market prices in active markets for identical assets or liabilities. Level 2 inputs consist of valuations based on quoted prices for similar assets or liabilities, quoted prices for identical assets or liabilities in an inactive market, or other observable inputs. Level 3 inputs consist of valuations based on unobservable inputs that are supported by little or no market activity.

The following table presents financial instruments, other than long-term debt, that we measured at fair value on a recurring basis at September 30, 2017 and 2016. See Note 10 for a detailed discussion of our long-term debt. We have classified the following assets in accordance with the fair value hierarchy set forth in the applicable standards. In instances where the inputs used to measure the fair value of an asset fall into more than one level of the hierarchy, we have classified them based on the lowest level input that is significant to the determination of the fair value.

		Level	Level	Total
	Level 1	2	3	Fair
September 30, 2017				Value
Assets:				
Cash and cash equivalents	\$397,890	\$-	\$ -	\$397,890
Other long-term investments	929	-	-	929
Derivative financial instruments	-	263	-	263
Total assets	\$398,819	\$263	\$ -	\$399,082

Liabilities:				
Derivative financial instruments	-	1,881	-	1,881
Total liabilities	\$-	\$1,881	\$ -	\$1,881

		Level	Level	Total
	Level 1	2	3	Fair
September 30, 2016				Value
Assets:				
Cash and cash equivalents	\$287,479	\$-	\$ -	\$287,479
Other long-term investments	1,028	-	-	1,028
Derivative financial instruments	-	28	-	28
Total assets	\$288,507	\$28	\$ -	\$288,535

Liabilities:				
Derivative financial instruments	-	1,469	-	1,469
Total liabilities	\$-	\$1,469	\$ -	\$1,469

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Our cash and cash equivalents consist of various bank accounts used to support our operations and investments in institutional money-market funds that are traded in active markets. We invest only in AAA-rated, prime institutional money market funds, comprised of high quality, short-term fixed income securities. Our other long-term investments represent the fair value of investments under the Cabot Microelectronics Supplemental Employee Retirement Plan (SERP), which is a nonqualified supplemental savings plan. The fair value of the investments is determined through quoted market prices within actively traded markets. Although the investments are allocated to individual participants and investment decisions are made solely by those participants, the SERP is a nonqualified plan. Consequently, the Company owns the assets and the related offsetting liability for disbursement until such time as a participant makes a qualifying withdrawal. The long-term asset was adjusted to \$929 in the fourth quarter of fiscal 2017 to reflect its fair value as of September 30, 2017.

Our derivative financial instruments include forward foreign exchange contracts and interest rate swaps. In fiscal 2015, we entered into floating-to-fixed interest rate swap agreements to hedge the variability in LIBOR-based interest payments on a portion of our outstanding variable rate debt. In the fourth quarter of fiscal 2017, we entered into forward foreign exchange contracts in an effort to protect our net investment in a foreign operation against potential adverse changes resulting from foreign currency fluctuation. The fair value of our derivative instruments is estimated using standard valuation models and market-based observable inputs over the contractual term, including one-month LIBOR-based yield curves for interest rate swaps, and forward rates and/or the Overnight Index Swap (OIS) curve for forward foreign exchange contracts, among others. We consider the risk of nonperformance, including counterparty credit risk, in the calculation of the fair value of derivative financial instruments. See Note 11 for more information on our use of derivative financial instruments.

**5. INVENTORIES**

Inventories consisted of the following:

	September 30,	
	2017	2016
Raw materials	\$36,415	\$45,109
Work in process	7,365	4,668
Finished goods	28,093	22,346
Total	\$71,873	\$72,123

**6. PROPERTY, PLANT AND EQUIPMENT**

Property, plant and equipment consisted of the following:

	September 30,	
	2017	2016
Land	\$17,823	\$18,636
Buildings	104,057	100,084
Machinery and equipment	187,649	198,870
Furniture and fixtures	6,770	6,642
Information systems	32,748	29,573
Construction in progress	10,439	6,358

Total property, plant and equipment	359,486	360,163
Less: accumulated depreciation	(253,125)	(253,667)
Net property, plant and equipment	\$106,361	\$106,496

Depreciation expense was \$17,195, \$16,915 and \$16,060 for the years ended September 30, 2017, 2016 and 2015, respectively.

In fiscal 2017, we recorded \$860 in impairment expense related to a surplus research and development asset, and we recorded a \$1,820 gain on the sale of surplus research and development equipment. We did not record any impairment expense on property, plant and equipment in fiscal 2016 and 2015.

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**INDEX****7. GOODWILL AND OTHER INTANGIBLE ASSETS**

Goodwill was \$101,932 and \$100,639 as of September 30, 2017 and 2016, respectively. The increase in goodwill was due to \$1,147 in foreign exchange fluctuations of the New Taiwan dollar and an adjustment of \$146 to a deferred tax liability.

The components of other intangible assets are as follows:

	September 30, 2017		September 30, 2016	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Other intangible assets subject to amortization:				
Product technology	\$42,287	\$ 17,604	\$42,194	\$ 12,718
Acquired patents and licenses	8,270	8,241	8,270	8,155
Trade secrets and know-how	2,550	2,550	2,550	2,550
Customer relationships, distribution rights and other	28,229	15,421	27,900	12,205
Total other intangible assets subject to amortization	81,336	43,816	80,914	35,628
Other intangible assets not subject to amortization:				
In-process technology	4,000		4,000	
Other indefinite-lived intangibles*	1,190		1,190	
Total other intangible assets not subject to amortization	5,190		5,190	
Total other intangible assets	\$86,526	\$ 43,816	\$86,104	\$ 35,628

\*Other indefinite-lived intangibles not subject to amortization primarily consist of trade names.

Amortization expense was \$7,795, \$8,176 and \$2,346 for fiscal 2017, 2016 and 2015, respectively. Estimated future amortization expense of intangible assets as of September 30, 2017 for the five succeeding fiscal years is as follows:

Fiscal Year	Estimated Amortization Expense
2018	\$ 7,118
2019	6,675
2020	6,670
2021	6,664
2022	6,664

Goodwill and indefinite-lived intangible assets are tested for impairment annually in the fourth quarter of our fiscal year or more frequently if indicators of potential impairment exist, using a fair-value-based approach. The recoverability of goodwill is measured at the reporting unit level, which is defined as either an operating segment or one level below an operating segment. An entity has the option to assess the fair value of a reporting unit either using a qualitative analysis ("step zero") or a quantitative analysis ("step one"). Similarly, an entity has the option to use a

step zero or a step one approach to determine the recoverability of indefinite-lived intangible assets. In fiscal 2016 and 2017, we chose to use a step one analysis for both goodwill impairment and for indefinite-lived intangible asset impairment.

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We completed our annual impairment test during our fourth quarter of fiscal 2017 and concluded that no impairment existed. During the fourth quarter of fiscal 2016, as discussed in Note 3, we recorded \$1,000 of impairment expense on one of the in-process technology assets acquired in the NexPlanar acquisition based on management's revised expected future cash flows for this asset. The impairment charge was included in research, development and technical expenses on our Consolidated Statements of Income. We concluded that no other impairment of goodwill or intangible assets was necessary. No impairment existed as a result of our impairment test during the fourth quarter of fiscal 2015. There have been no cumulative impairment charges recorded on the goodwill for any of our reporting units.

**8. OTHER LONG-TERM ASSETS**

Other long-term assets consisted of the following:

	September 30,	
	2017	2016
Auction rate securities (ARS)	\$5,319	\$5,494
Long-term contract asset	2,115	3,055
Other long-term assets	2,154	2,465
Other long-term investments	929	1,028
Total	\$10,517	\$12,042

We classify our ARS investments as held-to-maturity and have recorded them at cost. Our ARS investments at September 30, 2017 consisted of two tax exempt municipal debt securities with a total par value of \$5,319, both of which have maturities greater than ten years. The ARS market began to experience illiquidity in early 2008, and this illiquidity continues. Despite this lack of liquidity, there have been no defaults in payment of the underlying securities and interest income on these holdings continues to be received on scheduled interest payment dates. Our ARS, when purchased, were issued by A-rated municipalities. Although the credit ratings of both municipalities have been downgraded since our original investment, one of the ARS is credit enhanced with bond insurance, and the other has become an obligation of the bond insurer. Both ARS currently carry a credit rating of AA- by Standard & Poor's.

The fair value of our ARS, determined using level 2 fair value inputs, was \$4,884 as of September 30, 2017. We have classified our ARS as held-to-maturity based on our intention and ability to hold the securities until maturity. We believe the gross unrecognized loss of \$435 is due to the illiquidity in the ARS market, rather than to credit loss. Although we believe these securities will ultimately be collected in full, we believe that it is not likely that we will be able to monetize the securities in our next business cycle (which for us is generally one year). We will continue to monitor our ARS for impairment indicators, which may require us to record an impairment charge that is deemed other-than-temporary.

In the third quarter of fiscal 2015, we amended a supply contract with an existing supplier. The amended agreement includes a fee of \$4,500, which provides us the option to purchase certain raw materials beyond calendar 2016. This fee was recorded as a long-term asset at its present value and is being amortized into cost of goods sold on a straight-line basis through December 31, 2019, the expiration date of the agreement. See Note 18 for more information regarding this contract.

Other long-term assets are comprised of the long-term portion of prepaid unamortized debt costs, related to our Revolving Credit Facility, as well as miscellaneous deposits and prepayments on contracts extending beyond the next 12 months. As discussed in Note 10, we reclassified \$435 of prepaid debt costs related to our Term Loan out of other



long-term assets as of September 30, 2016, in accordance with the adoption of a new accounting pronouncement. As discussed in Note 4, we recorded a long-term asset and a corresponding long-term liability of \$929 representing the fair value of our SERP investments as of September 30, 2017.

**INDEX****9. ACCRUED EXPENSES, INCOME TAXES PAYABLE AND OTHER CURRENT LIABILITIES**

Accrued expenses, income taxes payable and other current liabilities consisted of the following:

	September 30,	
	2017	2016
Accrued compensation	\$35,332	\$17,856
Dividends payable	5,314	4,502
Goods and services received, not yet invoiced	2,172	2,648
Deferred revenue and customer advances	1,559	782
Warranty accrual	247	243
Income taxes payable	9,717	7,878
Taxes, other than income taxes	1,688	775
Current portion of long-term contract liability	1,500	1,500
Other	5,122	5,211
Total	\$62,651	\$41,395

**10. DEBT**

On February 13, 2012, we entered into a credit agreement (the "Credit Agreement") among the Company, as Borrower, Bank of America, N.A., as administrative agent, swing line lender and an L/C issuer, Bank of America Merrill Lynch and J.P. Morgan Securities LLC, as joint lead arrangers and joint book managers, JPMorgan Chase Bank, N.A., as syndication agent, and Wells Fargo Bank, N.A. as documentation agent. The Credit Agreement provided us with a \$175,000 term loan (the "Term Loan"), which we drew on February 27, 2012 to fund approximately half of the special cash dividend we paid to our stockholders on March 1, 2012, and a \$100,000 revolving credit facility (the "Revolving Credit Facility"), which has never been drawn, with sub-limits for multicurrency borrowings, letters of credit and swing-line loans. The Term Loan and the Revolving Credit Facility are referred to as the "Credit Facilities." On June 27, 2014, we entered into an amendment (the "Amendment") to the Credit Agreement, which (i) increased term loan commitments by \$17,500, from \$157,500 to \$175,000, the same level as the original amount under the Credit Agreement at its inception in 2012; (ii) increased the uncommitted accordion feature on the Revolving Credit Facility from \$75,000 to \$100,000; (iii) extended the expiration date of the Credit Facilities from February 13, 2017 to June 27, 2019; (iv) relaxed the consolidated leverage ratio financial covenant; and (v) revised certain pricing terms and other terms within the Credit Agreement. On June 27, 2014, we drew the \$17,500 of increased term loan commitments, bringing the total outstanding commitments under the Term Loan to \$175,000.

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Borrowings under the amended Credit Facilities (other than in respect of swing-line loans) bear interest at a rate per annum equal to the "Applicable Rate" (as defined below) plus, at our option, either (1) a LIBOR rate determined by reference to the cost of funds for deposits in the relevant currency for the interest period relevant to such borrowing or (2) the "Base Rate", which is the highest of (x) the prime rate of Bank of America, N.A., (y) the federal funds rate plus 1/2 of 1.00% and (z) the one-month LIBOR rate plus 1.00%. The current Applicable Rate for borrowings under the Credit Facilities is 1.50%, as amended, with respect to LIBOR borrowings and 0.25% with respect to Base Rate borrowings, with such Applicable Rate subject to adjustment based on our consolidated leverage ratio. Swing-line loans bear interest at the Base Rate plus the Applicable Rate for Base Rate loans under the Revolving Credit Facility. In addition to paying interest on outstanding principal under the Credit Agreement, we pay a commitment fee to the lenders under the Revolving Credit Facility in respect of the unutilized commitments thereunder. As amended, the fee ranges from 0.20% to 0.30%, based on our consolidated leverage ratio. Interest expense and commitment fees are paid according to the relevant interest period and no less frequently than at the end of each calendar quarter. We also pay letter of credit fees as necessary. The Term Loan has periodic scheduled repayments; however, we may voluntarily prepay the Credit Facilities without premium or penalty, subject to customary "breakage" fees and reemployment costs in the case of LIBOR borrowings. All obligations under the Credit Agreement are guaranteed by certain of our existing and future direct and indirect domestic subsidiaries. The obligations under the Credit Agreement and guarantees of those obligations are secured, subject to certain exceptions, by first priority liens and security interests in the assets of the Company and certain of its domestic subsidiaries.

The Credit Agreement contains covenants that restrict the ability of the Company and its subsidiaries to take certain actions, including, among other things and subject to certain significant exceptions: creating liens, incurring indebtedness, making investments, engaging in mergers, selling property, paying dividends or amending organizational documents. The Credit Agreement requires us to comply with certain financial ratio maintenance covenants. These include a maximum consolidated leverage ratio of 2.75 to 1.00 and a minimum consolidated fixed charge coverage ratio of 1.25 to 1.00 for the period January 1, 2016 through the expiration of the Credit Agreement. As of September 30, 2017, our consolidated leverage ratio was 0.91 to 1.00 and our consolidated fixed charge coverage ratio was 3.41 to 1.00. The Credit Agreement also contains customary affirmative covenants and events of default. We believe we are in compliance with these covenants.

At September 30, 2017, the fair value of the Term Loan, using level 2 inputs, approximates its carrying value of \$144,376 as the loan bears a floating market rate of interest. As of September 30, 2017, \$10,938 of the debt outstanding is classified as short-term.

In the first quarter of fiscal 2017, we adopted the provisions of Accounting Standards Update No. 2015-03, "Simplifying the Presentation of Debt Issuance Costs" (ASU 2015-03) and ASU 2015-15, "Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements". The provisions of ASU 2015-03 require an entity to present the debt issuance costs related to a recognized debt liability in the balance sheet as a direct deduction to the carrying amount of that debt liability. ASU 2015-03 requires adoption on a retrospective basis, wherein the balance sheet of each individual period should be adjusted to reflect the period-specific effects of the guidance. ASU 2015-15 provides guidance on the treatment of debt issuance costs related to line-of-credit arrangements based on comments provided by the SEC staff. The SEC staff stated that it would not object to an entity deferring and presenting debt issuance costs as an asset and subsequently amortizing the deferred debt issuance cost ratably over the term of the line-of-credit arrangement, regardless of whether there are any outstanding borrowings on the line-of-credit arrangement. In accordance with this guidance, we have separated our debt issuance costs between those attributable to our Term Loan and those attributable to our Revolving Credit Facility. The debt issuance costs attributable to our Term Loan are presented as a reduction of the long-term debt balance on our Consolidated Balance Sheet, while the debt issuance costs attributable to our Revolving Credit Facility remain in prepaid expenses and other current assets, and other long-term assets. As of September 30, 2017, \$441 of

debt issuance costs related to our Term Loan are presented as a reduction of long-term debt. Debt issuance costs related to our Revolving Credit Facility are not material. As of September 30, 2016, we reclassified \$261 and \$435 of debt issuance costs related to our Term Loan from prepaid expenses and other current assets, and other long-term assets, respectively, and presented them as a reduction of our long-term debt on our Consolidated Balance Sheet.

Principal repayments of the Term Loan are generally made on the last calendar day of each quarter if that day is considered to be a business day. As of September 30, 2017, scheduled principal repayments of the Term Loan were as follows:

Fiscal Year	Principal Repayments
2018	\$ 10,938
2019	133,438
Total	\$ 144,376

**INDEX****11. DERIVATIVE FINANCIAL INSTRUMENTS**

We are exposed to various market risks, including risks associated with interest rates and foreign currency exchange rates. We enter into certain derivative transactions to mitigate the volatility associated with these exposures. We have policies in place that define acceptable instrument types we may enter into and we have established controls to limit our market risk exposure. We do not use derivative financial instruments for trading or speculative purposes. In addition, all derivatives, whether designated in hedging relationships or not, are required to be recorded on the balance sheet at fair value on a gross basis.

**Cash Flow Hedges – Interest Rate Swap Agreements**

In fiscal 2015, we entered into floating-to-fixed interest rate swap agreements to hedge the variability in LIBOR-based interest payments on \$86,406 of our outstanding variable rate debt. The notional amount of the swaps decreases each quarter by an amount in proportion to our scheduled quarterly principal payment of debt. The notional value of the swaps was \$72,188 as of September 30, 2017, and the swaps are scheduled to expire on June 27, 2019.

We have designated these swap agreements as cash flow hedges pursuant to ASC 815, "Derivatives and Hedging". As cash flow hedges, unrealized gains are recognized as assets and unrealized losses are recognized as liabilities. Unrealized gains and losses are designated as effective or ineffective based on a comparison of the changes in fair value of the interest rate swaps and changes in fair value of the underlying exposures being hedged. The effective portion is recorded as a component of accumulated other comprehensive income or loss, while the ineffective portion is recorded as a component of interest expense. Changes in the method by which we pay interest from one-month LIBOR to another rate of interest could create ineffectiveness in the swaps, and result in amounts being reclassified from other comprehensive income into net income. Hedge effectiveness is tested quarterly to determine if hedge treatment continues to be appropriate.

**Foreign Currency Contracts Not Designated as Hedges**

Periodically we enter into forward foreign exchange contracts in an effort to mitigate the risks associated with currency fluctuations on certain foreign currency balance sheet exposures. These foreign exchange contracts do not qualify for hedge accounting; therefore, the gains and losses resulting from the impact of currency exchange rate movements on our forward foreign exchange contracts are recognized as other income or expense in the accompanying consolidated income statements in the period in which the exchange rates change. As of September 30, 2017 and September 30, 2016, respectively, the notional amounts of the forward contracts we held to purchase U.S. dollars in exchange for foreign currencies were \$8,176 and \$8,858, respectively, and the notional amounts of forward contracts we held to sell U.S. dollars in exchange for foreign currencies were \$24,295 and \$15,635, respectively.

**Net Investment Hedge – Foreign Exchange Contracts**

In September 2017, we entered into two forward foreign exchange contracts in an effort to protect the net investment of our Korean subsidiary against potential adverse changes resulting from currency fluctuations in the Korean won. We entered into forward contracts to sell Korean won and buy U.S. dollars, and these contracts will settle on September 26, 2022. We have designated these forward contracts as an effective net investment hedge. The total notional amount under the contracts is 100 billion Korean won. As of September 30, 2017, the change in the fair value of the forward contracts in the net investment hedge relationship was \$1,442, which was recorded in foreign currency translation adjustments within other comprehensive income.

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The fair value of our derivative instruments included in the Consolidated Balance Sheet, which was determined using level 2 inputs, was as follows:

	Consolidated Balance Sheet Location	Asset Derivatives		Liability Derivatives	
		September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Derivatives designated as hedging instruments					
Interest rate swap contracts	Other long-term assets	\$ 117	\$ -	\$ -	\$ -
	Accrued expenses, income taxes payable and other current liabilities	\$ -	\$ -	\$ 31	\$ 612
	Other long-term liabilities	\$ -	\$ -	\$ -	\$ 655
Foreign exchange contracts designated as net investment hedge	Other long-term liabilities	-	-	1,442	-
Derivatives not designated as hedging instruments					
Foreign exchange contracts	Prepaid expenses and other current assets	\$ 146	\$ 28	\$ -	\$ -
	Accrued expenses, income taxes payable and other current liabilities	\$ -	\$ -	\$ 408	\$ 202

The following table summarizes the effect of our derivative instrument on our Consolidated Statements of Income for the fiscal years ended September 30, 2017, 2016 and 2015:

Derivatives not designated as hedging instruments	Consolidated Statements of Income Location	Gain (Loss) Recognized in Consolidated Statements of Income Fiscal Year Ended September 30,		
		2017	2016	2015
Foreign exchange contracts	Other income (expense), net	\$(1,462)	\$676	\$(1,674)

The interest rate swap agreements have been deemed to be effective since inception, so there has been no impact on our Consolidated Statement of Income. We recorded a \$46 unrealized gain, net of tax, in accumulated comprehensive income during the year ended September 30, 2017 for these interest rate swaps. During the next 12 months, we expect approximately \$31 to be reclassified from accumulated other comprehensive income into interest expense related to our interest rate swaps based on projected rates of the LIBOR forward curve as of September 30, 2017.

Amounts recognized in Other comprehensive income (loss) for our net investment hedge during the fiscal year ended September 30, were as follows:

2017

Loss on net investment hedge	\$1,442
Tax benefit	(522 )
Loss on net investment hedge, net of tax	\$920

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## 12. ACCUMULATED OTHER COMPREHENSIVE INCOME

The table below summarizes the components of accumulated other comprehensive income (loss) (AOCI), net of tax provision/(benefit), for the years ended September 30, 2017, 2016, and 2015.

	Foreign Currency Translation	Cash Flow Hedges	Pension and Other Postretirement Liabilities	Total
Balance at September 30, 2014	\$ 10,115	\$-	\$ (860	) \$9,255
Foreign currency translation adjustment, net of tax of \$(1,731)	(14,126 )	-	-	(14,126)
Unrealized gain (loss) on cash flow hedges:				
Change in fair value, net of tax of \$(833)	-	(1,511)	-	(1,511 )
Reclassification adjustment into earnings, net of tax of \$336	-	610	-	610
Change in pension and other postretirement, net of tax of \$0	-	-	(318	) (318 )
Balance at September 30, 2015	(4,011 )	(901 )	(1,178	) (6,090 )
Foreign currency translation adjustment, net of tax of \$1,854	15,996	-	-	15,996
Unrealized gain (loss) on cash flow hedges:				
Change in fair value, net of tax of \$(274)	-	(499 )	-	(499 )
Reclassification adjustment into earnings, net of tax of \$321	-	583	-	583
Change in pension and other postretirement, net of tax of \$(584)	-	-	(434	) (434 )
Balance at September 30, 2016	11,985	(817 )	(1,612	) 9,556
Foreign currency translation adjustment, net of tax of \$(2,321)	(6,746 )	0	-	(6,746 )
Unrealized gain (loss) on cash flow hedges:				
Change in fair value, net of tax of \$(660)	-	1,161	-	1,161
Reclassification adjustment into earnings, net of tax of \$170	-	(298 )	-	(298 )
Change in pension and other postretirement, net of tax of \$79	-	-	276	276
Balance at September 30, 2017	\$ 5,239	\$46	\$ (1,336	) \$3,949

The before tax amount reclassified from OCI to net income in fiscal 2017, related to our cash flow hedges, was recorded as interest expense on our Consolidated Statement of Income. Amounts reclassified from OCI to net income, related to pension liabilities, were not material in fiscal years 2017, 2016 and 2015.



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## 13. SHARE-BASED COMPENSATION PLANS

## EQUITY INCENTIVE PLAN AND OMNIBUS INCENTIVE PLAN

In March 2004, our stockholders approved our Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan (the "EIP"), as amended and restated September 23, 2008. In March 2012, our stockholders approved the Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan (the "OIP"), which is the successor plan to the EIP, and which was amended as of March 2017. All share-based awards have been made from the OIP as of its approval date, and the EIP is no longer available for any awards. The OIP is administered by the Compensation Committee of the Board of Directors and is intended to provide management with the flexibility to attract, retain and reward our employees, directors, consultants and advisors. The OIP allows for the granting of six types of equity incentive awards: stock options, restricted stock, restricted stock units, stock appreciation rights (SARs), performance-based awards and substitute awards. The OIP also provides for cash incentive awards to be made. Substitute awards under the OIP are those awards that, in connection with an acquisition, may be granted to employees, directors, consultants or advisors of the acquired company, in substitution for equity incentives held by them in the seller or the acquired company. In fiscal 2016, pursuant to the Merger Agreement for our acquisition of NexPlanar, we granted incentive stock options (ISOs), as allowed under the OIP, to certain NexPlanar employees in substitution for unvested ISOs they had held in NexPlanar at the time of the closing of the acquisition. As of September 30, 2017, no SARs or performance awards had been granted to date under either plan. No awards of any type have been granted to date to consultants or advisors under either plan. The OIP authorizes up to 4,934,444 shares of stock to be granted thereunder, including up to 2,030,952 shares of stock in the aggregate of awards other than options or SARs, and up to 2,538,690 incentive stock options. The 4,934,444 shares of stock represents 2,901,360 shares of newly authorized shares and 2,033,084 shares previously available under the EIP. In addition, shares that become available from awards under the EIP and the OIP because of events such as forfeitures, cancellations or expirations, or because shares subject to an award are withheld to satisfy tax withholding obligations, will also be available for issuance under the OIP. Shares issued under our share-based compensation plans are issued from new shares rather than from treasury shares.

Non-qualified stock options issued under the OIP, as they were under the EIP, are generally time-based and provide for a ten-year term, with options generally vesting equally over a four-year period, with first vesting on the first anniversary of the award date. Non-qualified stock options granted to non-employee directors on an annual basis vest 100% on the first anniversary of the award date. Under the OIP, as under the EIP, employees may also be granted ISOs to purchase common stock at not less than the fair value on the date of the grant. Prior to fiscal 2016, no ISOs had been granted under either plan. In the first quarter of fiscal 2016, we substituted certain NexPlanar ISOs with Cabot Microelectronics Corporation ISOs, preserving the intrinsic value, including the original vesting periods, of the original awards. Compensation expense related to our stock option awards was \$5,500, \$6,767 and \$7,173 in fiscal 2017, 2016 and 2015, respectively. For additional information on our accounting for share-based compensation, see Note 2.

Under the OIP, as under the EIP, employees and non-employees may be awarded shares of restricted stock or restricted stock units, which generally vest over a four-year period, with first vesting on the anniversary of the grant date. Restricted stock units granted to non-employee directors on an annual basis vest 100% on the first anniversary of the award date. In general, shares of restricted stock and restricted stock units may not be sold, assigned, transferred, pledged, disposed of or otherwise encumbered. Holders of restricted stock, and restricted stock units, if specified in the award agreements, have all the rights of stockholders, including voting and dividend rights, subject to the above restrictions, although the holders of restricted stock units awarded prior to fiscal 2016 do not have such rights. Holders of restricted stock units awarded as of fiscal 2016 have dividend equivalent rights pursuant to the terms of the OIP and respective award agreements. Restricted shares under the OIP, as under the EIP, also may be purchased and placed "on deposit" by executive officers pursuant to the 2001 Deposit Share Program. Shares

purchased under this Deposit Share Program receive a 50% match in restricted shares ("Award Shares"). These Award Shares vest at the end of a three-year period, and are subject to forfeiture upon early withdrawal of the deposit shares. Compensation expense related to our restricted stock and restricted stock unit awards and restricted shares matched at 50% pursuant to the Deposit Share Program was \$6,730, \$6,369 and \$8,491 for fiscal 2017, 2016 and 2015, respectively.

**INDEX****EMPLOYEE STOCK PURCHASE PLAN**

In March 2008, our stockholders approved our 2007 Cabot Microelectronics Employee Stock Purchase Plan (the "ESPP"), which amended the ESPP for the primary purpose of increasing the authorized shares of common stock to be purchased under the ESPP from 475,000 designated shares to 975,000 shares. As of September 30, 2017, a total of 435,400 shares are available for purchase under the ESPP. The ESPP allows all full-time, and certain part-time, employees of our Company and its subsidiaries to purchase shares of our common stock through payroll deductions. Employees can elect to have up to 10% of their annual earnings withheld to purchase our stock, subject to a maximum number of shares that a participant may purchase and a maximum dollar expenditure in any six-month offering period, and certain other criteria. The provisions of the ESPP allow shares to be purchased at a price no less than the lower of 85% of the closing price at the beginning or end of each semi-annual stock purchase period. A total of 69,751, 77,437, and 65,735 shares were issued under the ESPP during fiscal 2017, 2016 and 2015, respectively. Compensation expense related to the ESPP was \$774, \$763 and \$686 in fiscal 2017, 2016 and 2015, respectively.

**DIRECTORS' DEFERRED COMPENSATION PLAN**

The Directors' Deferred Compensation Plan (DDCP), as amended and restated September 23, 2008, became effective in March 2001 and applies only to our non-employee directors. The cumulative number of shares deferred under the plan was 0 and 16,641 as of September 30, 2017 and 2016, respectively. Compensation expense related to the DDCP was \$0, \$42, and \$95 for each of fiscal 2017, 2016 and 2015, respectively.

**ACCOUNTING FOR SHARE-BASED COMPENSATION**

We record share-based compensation expense for all share-based awards, including stock option grants, restricted stock and restricted stock unit awards and employee stock purchase plan purchases. We calculate share-based compensation expense using the straight-line approach based on awards ultimately expected to vest, which requires the use of an estimated forfeiture rate. Our estimated forfeiture rate is primarily based on historical experience, but may be revised in future periods if actual forfeitures differ from the estimate. We use the Black-Scholes option-pricing model to estimate the grant date fair value of our stock options and employee stock purchase plan purchases. This model requires the input of highly subjective assumptions, including the price volatility of the underlying stock, the expected term of our stock options, expected dividend yield and the risk-free interest rate. We estimate the expected volatility of our stock options based on a combination of our stock's historical volatility and the implied volatilities from actively-traded options on our stock. We calculate the expected term of our stock options using historical stock option exercise data, and we add a slight premium to this expected term for employees who meet the definition of retirement-eligible pursuant to their grants during the contractual term of the grant. The expected dividend yield represents our annualized dividend in dollars divided by the stock price on the date of grant. The risk-free interest rate is derived from the U.S. Treasury yield curve in effect at the time of grant.

The fair value of our share-based awards, as shown below, was estimated using the Black-Scholes model with the following weighted-average assumptions, excluding the effect of our leveraged recapitalization:

	Year Ended September 30,					
	2017		2016		2015	
Stock Options						
Weighted-average grant date fair value	\$16.50		\$14.47		\$16.99	
Expected term (in years)	6.57		6.56		6.30	
Expected volatility	27	%	26	%	33	%
Risk-free rate of return	2.1	%	1.9	%	1.9	%

Dividend yield 1.2 % 0.3 % -

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	Year Ended September 30,		
	2017	2016	2015
<b>ESPP</b>			
Weighted-average grant date fair value	\$12.49	\$9.57	\$10.17
Expected term (in years)	0.50	0.50	0.50
Expected volatility	24 %	24 %	24 %
Risk-free rate of return	0.6 %	0.4 %	0.1 %
Dividend yield	1.3 %	0.5 %	-

The Black-Scholes model is primarily used in estimating the fair value of short-lived exchange traded options that have no vesting restrictions and are fully transferable. Because employee stock options and ESPP purchases have certain characteristics that are significantly different from traded options, and because changes in the subjective assumptions can materially affect the estimated value, our use of the Black-Scholes model for estimating the fair value of stock options and ESPP purchases may not provide an accurate measure. Although the value of our stock options and ESPP purchases are determined in accordance with applicable accounting standards using an option-pricing model, those values may not be indicative of the fair values observed in a willing buyer/willing seller market transaction.

The fair value of our restricted stock and restricted stock unit awards represents the closing price of our common stock on the date of award. Share-based compensation expense related to restricted stock and restricted stock unit awards is recorded net of expected forfeitures.

**SHARE-BASED COMPENSATION EXPENSE**

Total share-based compensation expense for the years ended September 30, 2017, 2016 and 2015, is as follows:

Income statement classifications:	Year Ended September 30,		
	2017	2016	2015
Cost of goods sold	\$2,229	\$2,105	\$1,912
Research, development and technical	1,792	1,633	1,596
Selling and marketing	1,380	1,618	1,075
General and administrative	7,603	8,585	11,862
Tax benefit	(4,339)	(4,341)	(5,511)
Total share-based compensation expense, net of tax	\$8,665	\$9,600	\$10,934

As discussed in Note 3, in fiscal 2016, we recorded \$154 in share-based compensation expense related to certain unvested NexPlanar ISOs settled in cash at the acquisition date. The \$154 represents the portion of the fair value of the original awards related to the post-acquisition period had these awards not been settled in cash at the acquisition date. U.S. GAAP prescribes that the portion of fair value of equity awards related to pre-acquisition service periods represents purchase consideration, including equity awards vesting immediately upon a change-in-control, and the portion of fair value related to post-acquisition service periods represents compensation expense. Since the post-acquisition service requirement was eliminated through the cash settlement, the \$154 in compensation expense was recorded immediately following the acquisition date. We accelerated the vesting on the substitute ISO awards made to certain individuals based on the terms of their employment agreements and recorded \$492 of share-based compensation expense related to this acceleration. The total \$646 of acquisition-related compensation is included in the table above as general and administrative expense.



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Our non-employee directors received annual equity awards in March 2017, pursuant to the OIP. The award agreements provide for immediate vesting of the award at the time of termination of service for any reason other than by reason of Cause, Death, Disability or a Change in Control, as defined in the OIP, if at such time the non-employee director has completed an equivalent of at least two full terms as a director of the Company, as defined in the Company's bylaws. Two of the Company's non-employee directors had completed at least two full terms of service as of the date of the March 2017 award. Consequently, the requisite service period for the award has already been satisfied and we recorded the fair value of \$377 of the awards to these two directors to share-based compensation expense in the fiscal quarter ended March 31, 2017 rather than recording that expense over the one-year vesting period stated in the award agreement, as is done for the other non-employee directors who received an annual equity award in March 2017.

As discussed in our Annual Report on Form 10-K for the fiscal year ended September 30, 2015, in conjunction with an executive officer transition, all unvested stock options and restricted stock held by our former President and Chief Executive Officer, who remains the Chairman of our Board of Directors in a non-executive capacity, vested in full on December 31, 2015, in accordance with the terms of his employment letter with the Company dated December 12, 2014. We applied the accounting guidance under Accounting Standards Codification (ASC) Topic 718 "Stock Compensation" to determine the additional share-based compensation expense to be recorded as part of the modification of the outstanding equity. The original fair value of his unvested equity totaling \$5,033 was recorded ratably between the date of modification and December 31, 2015, rather than recording the expense over the original vesting period.

**STOCK OPTION ACTIVITY**

A summary of stock option activity under the EIP and OIP as of September 30, 2017, and changes during fiscal 2017 are presented below:

	Stock Options	Weighted Average Exercise Price	Weighted Average Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at September 30, 2016	2,052,552	\$ 36.97		
Granted	369,230	60.99		
Exercised	(818,640 )	33.79		
Forfeited or canceled	(86,081 )	43.38		
Outstanding at September 30, 2017	1,517,061	\$ 44.17	7.0	\$ 54,251
Exercisable at September 30, 2017	726,897	\$ 36.34	5.5	\$ 31,687
Expected to vest after September 30, 2017	788,676	\$ 51.36	8.3	\$ 22,535

The aggregate intrinsic value in the table above represents the total pretax intrinsic value (i.e., for all in-the-money stock options, the difference between our closing stock price of \$79.93 per share on the last trading day of fiscal 2017 and the exercise price, multiplied by the number of shares) that would have been received by the option holders had all option holders exercised their options on the last trading day of fiscal 2017. The total intrinsic value of options exercised was \$25,213, \$12,317 and 31,546 for fiscal 2017, 2016 and 2015, respectively.

The total cash received from options exercised was \$27,666, \$16,623 and \$33,177 for fiscal 2017, 2016 and 2015, respectively. The actual tax benefit realized for the tax deductions from options exercised was \$8,743, \$4,076 and \$10,569 for fiscal 2017, 2016 and 2015, respectively. The total fair value of stock options vested during fiscal years 2017, 2016 and 2015 was \$5,300, \$7,880 and \$7,005, respectively. As of September 30, 2017, there was \$8,727 of total unrecognized share-based compensation expense related to unvested stock options granted under the EIP and OIP. That cost is expected to be recognized over a weighted-average period of 2.3 years.



**INDEX****RESTRICTED STOCK AND RESTRICTED STOCK UNITS**

A summary of the status of the restricted stock awards and restricted stock unit awards outstanding that were granted under the EIP and OIP as of September 30, 2017, and changes during fiscal 2017, are presented below:

	Restricted Stock Awards and Units	Weighted Average Grant Date Fair Value
Nonvested at September 30, 2016	340,460	\$ 43.13
Granted	193,761	61.75
Vested	(154,526)	44.64
Forfeited	(33,182 )	47.76
Nonvested at September 30, 2017	346,513	\$ 52.43

The total fair value of restricted stock awards and restricted stock units vested during fiscal years 2017, 2016 and 2015 was \$6,898, \$10,740 and \$7,222, respectively. As of September 30, 2017, there was \$13,058 of total unrecognized share-based compensation expense related to unvested restricted stock awards and restricted stock units under the EIP and OIP. That cost is expected to be recognized over a weighted-average period of 2.6 years.

**14. SAVINGS PLAN**

Effective in May 2000, we adopted the Cabot Microelectronics Corporation 401(k) Plan (the "401(k) Plan"), which is a qualified defined contribution plan, covering all eligible U.S. employees meeting certain minimum age and eligibility requirements, as defined by the 401(k) Plan. Participants may make elective contributions of up to 60% of their eligible compensation. All amounts contributed by participants and earnings on these contributions are fully vested at all times. The 401(k) Plan provides for matching and fixed non-elective contributions by the Company. Under the 401(k) Plan, the Company will match 100% of the first four percent of the participant's eligible compensation and 50% of the next two percent of the participant's eligible compensation that is contributed, subject to limitations required by government regulations. Under the 401(k) Plan, all U.S. employees, even those who do not contribute to the 401(k) Plan, receive a contribution by the Company in an amount equal to four percent of eligible compensation, and thus are participants in the 401(k) Plan. Participants are 100% vested in all Company contributions at all times. The Company's expense for the 401(k) Plan totaled \$5,256, \$4,624 and \$4,111 for the fiscal years ended September 30, 2017, 2016 and 2015, respectively.

**15. OTHER INCOME, NET**

Other income, net, consisted of the following:

	Year Ended September 30,		
	2017	2016	2015
Interest income	\$2,351	\$949	\$365
Other income (expense)	(438 )	(296)	316

Total other income, net \$1,913 \$653 \$681

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## 16. STOCKHOLDERS' EQUITY

The following is a summary of our capital stock activity over the past three years:

	Number of Shares	
	Common Stock	Treasury Stock
September 30, 2014	31,927,601	8,142,687
Exercise of stock options	1,324,646	
Restricted stock under EIP and OIP, net of forfeitures	172,010	
Restricted stock under Deposit Share Program, net of forfeitures	(811)	
Common stock under ESPP	65,735	
Repurchases of common stock under share repurchase plans		851,245
Repurchases of common stock – other		47,746
September 30, 2015	33,489,181	9,041,678
Exercise of stock options	606,562	
Restricted stock under EIP and OIP, net of forfeitures	86,277	
Restricted stock under Deposit Share Program, net of forfeitures	1,847	
Common stock under ESPP	77,437	
Repurchases of common stock under share repurchase plans		636,839
Repurchases of common stock – other		66,125
September 30, 2016	34,261,304	9,744,642
Exercise of stock options	818,640	
Restricted stock under EIP and OIP, net of forfeitures	81,047	
Restricted stock under Deposit Share Program, net of forfeitures	-	
Common stock under ESPP	69,751	
Repurchases of common stock under share repurchase plans		167,809
Repurchases of common stock – other		35,739
September 30, 2017	35,230,742	9,948,190

## COMMON STOCK

Each share of common stock, including those awarded as restricted stock, but not restricted stock units, entitles the holder to one vote on all matters submitted to a vote of Cabot Microelectronics' stockholders. Common stockholders are entitled to receive ratably the dividends, if any, as may be declared by the Board of Directors. Holders of restricted stock units awarded in fiscal 2017 are entitled to dividend equivalents, which are paid to the holder upon the vesting of the restricted stock units. The number of authorized shares of common stock is 200,000,000 shares.

**INDEX****SHARE REPURCHASES**

In January 2016, our Board of Directors authorized an increase in the amount available under our share repurchase program from \$75,000 to \$150,000. Under this program, we repurchased 167,809 shares for \$12,035 during fiscal 2017, 636,839 shares for \$25,980 during fiscal 2016, and 851,245 shares for \$40,026 during fiscal 2015. As of September 30, 2017, \$121,993 remains available under our share repurchase program. To date, we have funded share repurchases under our share repurchase program from our existing cash balance, and anticipate we will continue to do so. The program, which became effective on the authorization date, may be suspended or terminated at any time, at the Company's discretion. For additional information on share repurchases, see Part II, Item 5, "Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities" and the section titled "Liquidity and Capital Resources" in Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Form 10-K.

Separate from this share repurchase program, a total of 35,739, 66,125 and 47,746 shares were purchased during fiscal 2017, 2016 and 2015, respectively, pursuant to the terms of our EIP and OIP as shares withheld from award recipients to cover payroll taxes on the vesting of shares of restricted stock granted under the EIP and OIP.

**17. INCOME TAXES**

Income before income taxes was as follows:

	Year Ended September 30,		
	2017	2016	2015
Domestic	\$33,272	\$7,130	\$15,305
Foreign	76,100	63,308	55,892
Total	\$109,372	\$70,438	\$71,197

Taxes on income consisted of the following:

	Year Ended September 30,		
	2017	2016	2015
U.S. federal and state:			
Current	\$8,606	\$609	\$6,496
Deferred	1,550	(1,465)	1,791
Total	\$10,156	\$(856)	\$8,287
Foreign:			
Current	\$13,422	\$11,737	\$7,686
Deferred	(1,158)	(292)	(922)
Total	12,264	11,445	6,764
Total U.S. and foreign	\$22,420	\$10,589	\$15,051

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The provision for income taxes at our effective tax rate differed from the statutory rate as follows:

	Year Ended September 30,		
	2017	2016	2015
Federal statutory rate	35.0%	35.0%	35.0%
U.S. benefits from research and experimentation activities	(1.0)	(3.5)	(2.2)
State taxes, net of federal effect	0.4	(0.1)	0.6
Foreign income at other than U.S. rates	(14.7)	(16.9)	(21.4)
Executive compensation	0.3	0.0	0.6
Share-based compensation	0.1	0.7	0.1
Adjustment of prior amounts	0.0	0.0	1.4
Taiwan Restructuring	0.0	0.0	7.2
Domestic production deduction	0.0	(1.3)	(1.3)
Other, net	0.4	1.1	1.1
Provision for income taxes	20.5%	15.0%	21.1%

In fiscal years 2015, 2016, and 2017, we elected to permanently reinvest the historical earnings of all of our foreign subsidiaries. We have not provided for deferred taxes on approximately \$254,800 of undistributed earnings of such subsidiaries. These earnings could become subject to additional income tax if they are remitted as dividends to the U.S. parent company, loaned to the U.S. parent company, or upon sale of subsidiary stock. Should we decide to repatriate these undistributed foreign earnings, we would need to record a deferred tax liability of approximately \$49,000 related to earnings.

The increase in the effective tax rate during fiscal 2017 was primarily due to the absence of the retroactive reinstatement of the research and experimentation tax credit recorded in fiscal 2016, and changes in the jurisdictional mix of income.

The decrease in the effective tax rate during fiscal 2016 was primarily due to the absence of income taxes incurred in fiscal 2015 related to the restructuring of our operations in Taiwan, the reinstatement of the research and experimentation tax credit in December 2015, and the benefit of \$928 related to domestic production deductions. This was partially offset by a change in the mix of earnings among various jurisdictions in which we operate, including a scheduled reduction in the benefit available under our tax holiday in South Korea from 100% to 50% of the statutory tax rate.

The results of operations for the fiscal year ended September 30, 2015 included tax adjustments to correct prior period amounts, which we determined to be immaterial to the prior periods to which they related. These adjustments, relating to the tax treatment of intercompany activities between certain of our foreign and U.S. operations, were recorded in fiscal 2015 and reduced full year net income by \$868 and diluted earnings per share by approximately \$0.04.

The Company had operated under a tax holiday in South Korea in conjunction with our investment in research, development and manufacturing facilities there, which expired at the end of fiscal 2017. This arrangement allowed for a tax at 50% of the statutory rate in effect in South Korea for fiscal years 2016 and 2017, following a 0% tax rate in fiscal years 2013, 2014, and 2015. This tax holiday reduced our fiscal 2017, 2016, and 2015 income tax provision by approximately \$5,018, \$3,771 and \$5,446, respectively. This tax holiday increased our fiscal 2017, 2016, and 2015 diluted earnings per share by approximately \$0.20, \$0.15, and \$0.22, respectively.



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The accounting guidance regarding uncertainty in income taxes prescribes a threshold for the financial statement recognition and measurement of tax positions taken or expected to be taken on a tax return. Under these standards, we may recognize the tax benefit of an uncertain tax position only if it is more likely than not that the tax position will be sustained by the taxing authorities, based on the technical merits of the position.

The following table presents the changes in the balance of gross unrecognized tax benefits during the last three fiscal years:

Balance September 30, 2014	\$701
Additions for tax positions relating to the current fiscal year	194
Additions for tax positions relating to prior fiscal years	1,400
Settlements with taxing authorities	(522 )
Balance September 30, 2015	1,773
Additions for tax positions relating to the current fiscal year	364
Additions for tax positions relating to prior fiscal years	200
Settlements with taxing authorities	(248 )
Balance September 30, 2016	2,089
Additions for tax positions relating to the current fiscal year	381
Additions for tax positions relating to prior fiscal years	44
Lapse of statute of limitations	(244 )
Balance September 30, 2017	\$2,270

The entire balance of unrecognized tax benefits shown above as of September 30, 2017 and 2016, would affect our effective tax rate if recognized. We recognize interest and penalties related to uncertain tax positions as income tax expense in our financial statements. Interest accrued on our Consolidated Balance Sheet was \$100 and \$65 at September 30, 2017 and 2016, respectively, and any interest and penalties charged to expense in fiscal years 2017, 2016 and 2015 was not material.

At September 30, 2017, the tax periods open to examination by the U.S. federal government included fiscal years 2014 through 2017. We believe the tax periods open to examination by U.S. state and local governments include fiscal years 2013 through 2017 and the tax periods open to examination by foreign jurisdictions include fiscal years 2012 through 2017. We do not anticipate a significant change to the total amount of unrecognized tax benefits within the next 12 months.

Significant components of net deferred tax assets and liabilities were as follows:

	September 30,	
	2017	2016
Deferred tax assets:		
Employee benefits	\$5,307	\$4,612
Inventory	2,863	3,117
Bad debt reserve	585	615
Share-based compensation expense	6,611	8,262
Credit and other carryforwards	22,663	25,596
Other	1,488	1,487
Valuation allowance	(2,271 )	(3,022 )
Total deferred tax assets	\$37,246	\$40,667

Deferred tax liabilities:

Depreciation and amortization	\$14,671	\$17,374
Translation adjustment	300	2,079
Other	739	542
Total deferred tax liabilities	\$15,710	\$19,995

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As of September 30, 2017, the Company had foreign, federal and state net operating loss carryforwards (NOLs) of \$5,642, \$26,075 and \$35,999, respectively, which will expire over the period between fiscal year 2018 and fiscal year 2037, for which we have recorded a \$1,039 gross valuation allowance, all of which was attributable to foreign NOLs. The majority of the federal and state NOLs are attributable to the NexPlanar acquisition. As of September 30, 2017, the Company had \$1,577 in state tax credit carryforwards, for which we have recorded a \$1,409 gross valuation allowance. As of September 30, 2017, the Company had a capital loss carryforward of \$2,772, for which we have recorded a full valuation allowance. As of September 30, 2017, the Company had foreign and federal tax credit carryforwards of \$4,811 and \$3,765, respectively, which will expire beginning in fiscal years 2028 through 2038.

**18. COMMITMENTS AND CONTINGENCIES****LEGAL PROCEEDINGS**

While we are not involved in any legal proceedings that we believe will have a material impact on our consolidated financial position, results of operations or cash flows, we periodically become a party to legal proceedings in the ordinary course of business.

**PRODUCT WARRANTIES**

We maintain a warranty reserve that reflects management's best estimate of the cost to replace product that does not meet our specifications and customers' performance requirements, and costs related to such replacement. The warranty reserve is based upon a historical product replacement rate, adjusted for any specific known conditions or circumstances. Additions and deductions to the warranty reserve are recorded in cost of goods sold. Our warranty reserve requirements changed during fiscal 2017 as follows:

Balance as of September 30, 2016	\$243
Reserve for product warranty during the reporting period	530
Settlement of warranty	(526)
Balance as of September 30, 2017	\$247

**INDEMNIFICATION**

In the normal course of business, we are a party to a variety of agreements pursuant to which we may be obligated to indemnify the other party with respect to certain matters. Generally, these obligations arise in the context of agreements entered into by us, under which we customarily agree to hold the other party harmless against losses arising from items such as a breach of certain representations and covenants including title to assets sold, certain intellectual property rights and certain environmental matters. These terms are common in the industries in which we conduct business. In each of these circumstances, payment by us is subject to certain monetary and other limitations and is conditioned on the other party making an adverse claim pursuant to the procedures specified in the particular agreement, which typically allow us to challenge the other party's claims.

We evaluate estimated losses for such indemnifications under the accounting standards related to contingencies and guarantees. We consider such factors as the degree of probability of an unfavorable outcome and the ability to make a reasonable estimate of the amount of loss. To date, we have not experienced material costs as a result of such obligations and, as of September 30, 2017, have not recorded any liabilities related to such indemnifications in our financial statements as we do not believe the likelihood of such obligations is probable.



**INDEX****LEASE COMMITMENTS**

We lease certain vehicles, warehouse facilities, office space, machinery and equipment under cancelable and noncancelable leases, all of which expire within five years from September 30, 2017, and may be renewed by us. Rent expense under such arrangements during fiscal 2017, 2016 and 2015 totaled \$3,120, \$2,765 and \$2,195, respectively.

Future minimum rental commitments under noncancelable leases as of September 30, 2017 are as follows:

## Fiscal Year Operating

2018	\$ 3,052
2019	2,587
2020	1,956
2021	1,392
2022	1,084
Thereafter	4,148
	\$ 14,219

**PURCHASE OBLIGATIONS**

Purchase obligations include our take-or-pay arrangements with suppliers, and purchase orders and other obligations entered into in the normal course of business regarding the purchase of goods and services. We have been operating under a fumed silica supply agreement with Cabot Corporation, our former parent company which is not a related party, the current term of which runs through December 31, 2019. As of calendar year 2017, this agreement has provided us the option to purchase fumed silica, with minimum purchase requirements through 2018, for the term of the agreement, for which we will pay a fee of \$1,500 in each of calendar years 2017, 2018 and 2019, of which the 2017 payment has already been made. The present value of this fee was \$2,933 as of September 30, 2017. The \$1,500 payment due for 2018 is included in accrued expenses and the remaining \$1,433 is included in other long-term liabilities on our Consolidated Balance Sheet. As of September 30, 2017, purchase obligations include \$9,749 of contractual commitments related to our Cabot Corporation supply agreement for fumed silica.

**POSTRETIREMENT OBLIGATIONS IN FOREIGN JURISDICTIONS**

We have unfunded defined benefit plans covering employees in certain foreign jurisdictions as required by local law. Our plans in Japan, which represent the majority of our pension liability for such plans, had projected benefit obligations of \$6,673 and \$7,091 as of September 30, 2017 and 2016, respectively, and an accumulated benefit obligation of \$5,253 and \$5,827 as of September 30, 2017 and 2016, respectively. Key assumptions used in the actuarial measurement of the Japan pension liability include weighted average discount rates of 0.50% and 0.25% at September 30, 2017 and 2016, respectively, and an expected rate of compensation increase of 2.50% and 2.00% at September 30, 2017 and 2016, respectively. Total future Japan pension costs included in accumulated other comprehensive income are \$1,837 and \$1,667 at September 30, 2017 and 2016, respectively.

Our plans in Korea had defined benefit obligations of \$1,663 and \$1,822 as of September 30, 2017 and 2016. Key assumptions used in the actuarial measurement of the Korea pension liability include weighted average discount rates of 4.00% and 3.00% at September 30, 2017 and 2016, respectively, and an expected rate of compensation increase of 4.50% and 5.00% at September 30, 2017 and 2016. Total future Korea pension costs included in accumulated other comprehensive income are \$6 and \$530 at September 30, 2017 and 2016, respectively.



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Benefit costs for the combined plans were \$1,176, \$1,024 and \$962 in fiscal years 2017, 2016 and 2015, respectively, consisting primarily of service costs, and were recorded as fringe benefit expense under cost of goods sold and operating expenses in our Consolidated Statement of Income. Estimated future benefit payments are as follows:

Fiscal Year	Amount
2018	\$ 304
2019	336
2020	565
2021	412
2022	717
2023 to 2027	\$ 3,451

**19. EARNINGS PER SHARE**

Basic earnings per share (EPS) is calculated by dividing net income available to common stockholders by the weighted-average number of common shares outstanding during the period, excluding the effects of unvested restricted stock awards with a right to receive non-forfeitable dividends, which are considered participating securities as prescribed by the two-class method under ASC 260. Diluted EPS is calculated in a similar manner, but the weighted-average number of common shares outstanding during the period is increased to include the weighted-average dilutive effect of "in-the-money" stock options and unvested restricted stock shares using the treasury stock method.

The standards of accounting for earnings per share require companies to provide a reconciliation of the numerator and denominator of the basic and diluted earnings per share computations. Basic and diluted earnings per share were calculated as follows:

	Year Ended September 30,		
	2017	2016	2015
Numerator:			
Net income	\$86,952	\$59,849	\$56,146
Less: income attributable to participating securities	(256 )	(361 )	(483 )
Net income available to common shareholders	\$86,696	\$59,488	\$55,663
Denominator:			
Weighted-average common shares (Denominator for basic calculation)	25,015,458	24,076,549	24,039,692
Weighted-average effect of dilutive securities:			
Share-based compensation	497,029	400,444	592,123
Diluted weighted-average common shares (Denominator for diluted calculation)	25,512,487	24,476,993	24,631,815
Earnings per share:			
Basic	\$3.47	\$2.47	\$2.32
Diluted	\$3.40	\$2.43	\$2.26

For the twelve months ended September 30, 2017, 2016, and 2015, approximately 0.4 million, 1.1 million and 0.7 million shares, respectively, attributable to outstanding stock options were excluded from the calculation of diluted

earnings per share.

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**INDEX****20. FINANCIAL INFORMATION BY INDUSTRY SEGMENT, GEOGRAPHIC AREA AND PRODUCT LINE**

We operate predominantly in one industry segment – the development, manufacture, and sale of CMP consumables. Revenues are attributed to the United States and foreign regions based upon the customer location and not the geographic location from which our products were shipped. Financial information by geographic area was as follows:

	Year Ended September 30,		
	2017	2016	2015
Revenue:			
United States	\$72,670	\$62,400	\$55,989
Asia	394,874	336,312	328,669
Europe	39,635	31,737	29,439
Total	\$507,179	\$430,449	\$414,097
Property, plant and equipment, net:			
United States	\$52,155	\$50,595	\$43,239
Asia	54,201	55,893	50,504
Europe	5	8	-
Total	\$106,361	\$106,496	\$93,743

The following table shows revenue from sales to customers in foreign countries that accounted for more than ten percent of our total revenue in fiscal 2017, 2016 and 2015:

	Year Ended September 30,		
	2017	2016	2015
Revenue:			
Taiwan	\$130,849	\$122,671	\$124,460
South Korea	95,414	76,082	70,608
China	74,781	59,239	49,350

The following table shows net property, plant and equipment in foreign countries that accounted for more than ten percent of our total net property, plant and equipment in fiscal 2017, 2016 and 2015:

	Year Ended September 30,		
	2017	2016	2015
Property, plant and equipment, net:			
Japan	\$21,408	\$26,268	\$22,572
South Korea	16,915	11,135	9,658
Taiwan	15,119	17,949	17,419

The following table shows revenue generated by product area in fiscal 2017, 2016 and 2015:

	Year Ended September 30,		
	2017	2016	2015
Revenue:			
Tungsten slurries	\$221,493	\$185,365	\$178,770
Dielectric slurries	120,240	99,141	96,386
Polishing Pads	68,673	52,067	32,048
Other Metals slurries	62,829	63,960	71,640
Engineered Surface Finishes	27,900	22,369	21,534

Data storage slurries	6,044	7,547	13,719
Total	\$507,179	\$430,449	\$414,097



**INDEX****SELECTED QUARTERLY OPERATING RESULTS**

The following table presents our unaudited financial information for the eight quarterly periods ended September 30, 2017. This unaudited financial information has been prepared in accordance with accounting principles generally accepted in the United States of America, applied on a basis consistent with the annual audited financial statements and in the opinion of management, include all necessary adjustments, which consist only of normal recurring adjustments necessary to present fairly the financial results for the periods. The results for any quarter are not necessarily indicative of results for any future period.

**CABOT MICROELECTRONICS CORPORATION**  
**SELECTED QUARTERLY OPERATING RESULTS**  
(Unaudited and in thousands, except per share amounts)

	Sept. 30, 2017	June 30, 2017	March 31, 2017	Dec. 31, 2016	Sept. 30, 2016	June 30, 2016	March 31, 2016	Dec. 31, 2015
Revenue	\$136,784	\$127,957	\$119,184	\$123,254	\$122,684	\$108,152	\$99,244	\$100,369
Cost of goods sold	66,734	65,414	59,153	61,749	61,598	56,127	52,348	50,174
Gross profit	70,050	62,543	60,031	61,505	61,086	52,025	46,896	50,195
Operating expenses:								
Research, development and technical	13,839	14,333	14,090	13,396	15,842	12,928	14,934	14,828
Selling and marketing	8,680	7,346	7,268	7,552	8,057	6,243	6,668	6,749
General and administrative	14,489	13,953	14,699	12,496	11,454	10,738	12,990	14,263
Total operating expenses	37,008	35,632	36,057	33,444	35,353	29,909	34,592	35,840
Operating income	33,042	26,911	23,974	28,061	25,733	22,116	12,304	14,355
Interest expense	1,127	1,117	1,135	1,150	1,187	1,178	1,191	1,167
Other income (expense), net	798	(115 )	234	996	257	(246 )	452	190
Income before income taxes	32,713	25,679	23,073	27,907	24,803	20,692	11,565	13,378
Provision for income taxes	6,211	5,740	4,793	5,676	4,096	1,990	2,434	2,069
Net income	\$26,502	\$19,939	\$18,280	\$22,231	\$20,707	\$18,702	\$9,131	\$11,309
Basic earnings per share	\$1.05	\$0.79	\$0.73	\$0.90	\$0.85	\$0.78	\$0.38	\$0.46
Weighted average basic shares outstanding	25,236	25,228	25,031	24,583	24,234	23,929	24,061	24,142
Diluted earnings per share	\$1.03	\$0.77	\$0.71	\$0.88	\$0.83	\$0.76	\$0.37	\$0.46
Weighted average diluted shares outstanding	25,710	25,721	25,526	25,072	24,678	24,325	24,408	24,549

Dividends per share	\$0.20	\$0.20	\$0.20	\$0.18	\$0.18	\$0.18	\$0.18	\$-
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**INDEX****SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS**

The following table sets forth activities in our allowance for doubtful accounts:

	Balance At Beginning of Year	Amounts Charged To Expenses	Deductions and Adjustments	Balance At End Of Year
Allowance For Doubtful Accounts				
Year ended:				
September 30, 2017	\$ 1,828	\$ 26	\$ (107 )	\$ 1,747
September 30, 2016	1,224	588	16	1,828
September 30, 2015	1,392	(84 )	(84 )	1,224

We maintain a warranty reserve that reflects management's best estimate of the cost to replace product that does not meet our specifications and customers' performance requirements, and costs related to such replacement. The warranty reserve is based upon a historical product replacement rate, adjusted for any specific known conditions or circumstances. Additions and deductions to the warranty reserve are recorded in cost of goods sold. Charges to expenses and deductions, shown below, represent the net change required to maintain an appropriate reserve.

	Balance At Beginning of Year	Reserve For Product Warranty During the Reporting Period	Adjustments To Pre-existing Warranty Reserve	Settlement of Warranty	Balance At End Of Year
Warranty Reserves					
Year ended:					
September 30, 2017	\$ 243	\$ 530	\$ -	\$ (526 )	\$ 247
September 30, 2016	209	595	-	(561 )	243
September 30, 2015	246	608	-	(645 )	209

We have provided a valuation allowance on certain deferred tax assets. The following table sets forth activities in our valuation allowance:

	Balance At Beginning of Year	Amounts Charged To Expenses	Deductions and Adjustments	Balance At End Of Year
Valuation Allowance				
Year ended:				
September 30, 2017	\$ 3,022	\$ -	\$ (751 )	\$ 2,271
September 30, 2016	3,079	-	(57 )	3,022
September 30, 2015	2,912	167	-	3,079



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**MANAGEMENT RESPONSIBILITY**

The accompanying consolidated financial statements were prepared by the Company in conformity with accounting principles generally accepted in the United States of America. The Company's management is responsible for the integrity of these statements and of the underlying data, estimates and judgments.

The Company's management establishes and maintains a system of internal accounting controls designed to provide reasonable assurance that its assets are safeguarded from loss or unauthorized use, transactions are properly authorized and recorded, and that financial records can be relied upon for the preparation of the consolidated financial statements. This system includes written policies and procedures, a code of business conduct and an organizational structure that provides for appropriate division of responsibility and the training of personnel. This system is monitored and evaluated on an ongoing basis by management in conjunction with its internal audit function.

The Company's management assesses the effectiveness of its internal control over financial reporting on an annual basis. In making this assessment, management uses the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control – Integrated Framework (2013). Management acknowledges, however, that all internal control systems, no matter how well designed, have inherent limitations and can provide only reasonable assurance with respect to financial statement preparation and presentation. In addition, the Company's independent registered public accounting firm evaluates the Company's internal control over financial reporting and performs such tests and other procedures as it deems necessary to reach and express an opinion on the fairness of the financial statements.

In addition, the Audit Committee of the Board of Directors provides general oversight responsibility for the financial statements. Composed entirely of Directors who are independent and not employees of the Company, the Committee meets periodically with the Company's management, internal auditors and the independent registered public accounting firm to review the quality of financial reporting and internal controls, as well as results of auditing efforts. The internal auditors and independent registered public accounting firm have full and direct access to the Audit Committee, with and without management present.

/s/ David H. Li

David H. Li  
Chief Executive Officer

/s/ William S. Johnson

William S. Johnson  
Chief Financial Officer

/s/ Thomas S. Roman

Thomas S. Roman  
Principal Accounting Officer

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**ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

None.

**ITEM 9A. CONTROLS AND PROCEDURES**

**EVALUATION OF DISCLOSURE CONTROLS AND PROCEDURES**

Our management, with the participation of our Chief Executive Officer (CEO) and Chief Financial Officer (CFO), has evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended ("the Exchange Act")), as of September 30, 2017. Based on that evaluation, our CEO and CFO have concluded that our disclosure controls and procedures were effective to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and to ensure that such information is accumulated and communicated to management, including the CEO and CFO, as appropriate to allow timely decisions regarding required disclosure.

While we believe the present design of our disclosure controls and procedures is effective enough to make known to our senior management in a timely fashion all material information concerning our business, we intend to continue to improve the design and effectiveness of our disclosure controls and procedures to the extent necessary in the future to provide our senior management with timely access to such material information, and to correct any deficiencies that we may discover in the future, as appropriate.

**MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is defined in Rule 13a-15(f) or Rule 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, the Company's CEO and CFO to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America. Internal control over financial reporting includes policies and procedures that: pertain to the maintenance of records that in reasonable detail accurately and fairly reflect our transactions and dispositions of the Company's assets; provide reasonable assurance that transactions are recorded as necessary for preparation of our financial statements in accordance with generally accepted accounting principles; provide reasonable assurance that receipts and expenditures of Company assets are made in accordance with management authorization; and provide reasonable assurance that unauthorized acquisition, use or disposition of Company assets that could have a material effect on our financial statements would be prevented or detected on a timely basis. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management evaluated the effectiveness of our internal control over financial reporting based on the framework in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this evaluation, our management concluded that the Company's internal control over financial reporting was effective as of September 30, 2017. The effectiveness of the Company's internal control over financial reporting as of September 30, 2017 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their attestation report which appears under Item 8 of this

Annual Report on Form 10-K.

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**CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING**

There were no changes in our internal control over financial reporting that occurred during our most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

**INHERENT LIMITATIONS ON EFFECTIVENESS OF CONTROLS**

Because of inherent limitations, our disclosure controls or our internal control over financial reporting may not prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

**ITEM 9B. OTHER INFORMATION**

None.



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**PART III**

**ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

The information required by Item 10 of Form 10-K with respect to identification of directors, the existence of a separately-designated standing audit committee, identification of members of such committee, and identification of an audit committee financial expert, is incorporated by reference from the information contained in the sections captioned "Election of Directors" and "Board Structure and Compensation" in our definitive Proxy Statement for the Annual Meeting of Stockholders to be held March 6, 2018 (the "Proxy Statement"). In addition, for information with respect to the executive officers of our Company, see "Executive Officers" in Part I of this Form 10-K and the section captioned "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement. Information required by Item 405 of Regulation S-K is incorporated by reference from the information contained in the section captioned "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement.

We have adopted a code of business conduct for all of our employees and directors, including our principal executive officer, other executive officers, principal financial officer and senior financial personnel. A copy of our code of business conduct is available free of charge on our Company website at [www.cabotcmp.com](http://www.cabotcmp.com). We intend to post on our website any material changes to, or waivers from, our code of business conduct, if any, within two days of any such event.

**ITEM 11. EXECUTIVE COMPENSATION**

The information required by Item 11 of Form 10-K is incorporated by reference from the information contained in the section captioned "Executive Compensation" in the Proxy Statement.

**INDEX****ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS****EQUITY COMPENSATION PLAN INFORMATION**

Shown below is information as of September 30, 2017, with respect to the shares of common stock that may be issued under Cabot Microelectronics' existing equity compensation plans.

Plan category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders (1)	1,798,707	(2) \$ 44.17(2	) 2,827,741 (3)
Equity compensation plans not approved by security holders			
Total	1,798,707	(2) \$ 44.17(2	) 2,827,741(3 )

Equity Compensation plans consist of our Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan (EIP), as amended and restated September 23, 2008, our Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan, as amended effective March 7, 2017 (OIP), and our Cabot Microelectronics Corporation 2007 Employee Stock Purchase Plan, as Amended and Restated September 23, 2013 (ESPP). As of March 6, 2012, all securities available for future issuance under the EIP were transferred to the OIP and the EIP is no longer available for any future awards. All share amounts in the above table reflect the effect of the leveraged recapitalization with a special cash dividend. See Note 13 of the "Notes to the Consolidated Financial Statements" for more information regarding our equity compensation plans.

Column (a) includes 281,646 shares that employees and non-employee directors have the right to acquire upon the vesting of the equivalent restricted stock units that they have been awarded under our equity incentive plans.

Column (b) excludes both of these from the weighted-average exercise price.

Column (c) includes 435,400 shares available for future issuance under the ESPP.

The other information required by Item 12 of Form 10-K is incorporated by reference from the information contained in the section captioned "Stock Ownership" in the Proxy Statement.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE**

The information required by Item 13 of Form 10-K is incorporated by reference from the information contained in the section captioned "Certain Relationships and Related Transactions" in the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 of Form 10-K is incorporated by reference from the information contained in the section captioned "Fees of Independent Auditors and Audit Committee Report" in the Proxy Statement.

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## PART IV

## ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following Financial Statements and Financial Statement Schedule are included in Item 8 herein:

## 1. Financial Statements:

Report of Independent Registered Public Accounting Firm

Consolidated Statements of Income for the years ended September 30, 2017, 2016 and 2015

Consolidated Statements of Comprehensive Income for the years ended September 30, 2017, 2016 and 2015

Consolidated Balance Sheets at September 30, 2017 and 2016

Consolidated Statements of Cash Flows for the years ended September 30, 2017, 2016 and 2015

Consolidated Statements of Changes in Stockholders' Equity for the years ended September 30, 2017, 2016 and 2015

Notes to the Consolidated Financial Statements

## 2. Financial Statement Schedule: Schedule II – Valuation and Qualifying Accounts

## 3. Exhibits - The following exhibits are filed as part of, or incorporated by reference into, this Report on Form 10-K:

Exhibit No.	Description	Filed as an exhibit to, and incorporated by reference from		
		Form	File No.	Filing Date
2.1	<u>Agreement and Plan of Merger, dated as of September 27, 2015, by and among NexPlanar Corporation, Cabot Microelectronics Corporation, Matrix Merger Co., and Shareholder Representative Services LLC solely in its capacity as representative.</u>	8-K	000-30205	September 28, 2015
3.2	<u>(Third) Amended and Restated By-Laws of Cabot Microelectronics Corporation.</u>	8-K	000-30205	March 6, 2017
3.3	<u>Form of Amended and Restated Certificate of Incorporation of Cabot Microelectronics Corporation.</u>	S-1	333-95093	March 27, 2000
4.1	<u>Form of Cabot Microelectronics Corporation Common Stock Certificate.</u>	S-1	333-95093	April 3, 2000
10.1	<u>Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan, as amended and restated September 23, 2008.*</u>	10-K	000-30205	November 25, 2008
10.2	<u>Form of Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan Non-Qualified Stock Option Grant Agreement (non-employee directors).*</u>	10-Q	000-30205	May 9, 2011
10.4	<u>Form of Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan Non-Qualified Stock Option Grant Agreement (employees (including executive officers)).*</u>	10-Q	000-30205	February 8, 2011
10.5	<u>Form of Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan Restricted Stock Award Agreement (employees (including executive officers)).*</u>	10-Q	000-30205	February 8, 2011
10.6	<u>Form of Second Amended and Restated Cabot Microelectronics Corporation 2000 Equity Incentive Plan Restricted Stock Units Award Agreement (non-employee directors).*</u>	10-Q	000-30205	May 9, 2011
10.15	<u>Cabot Microelectronics Corporation 2007 Employee Stock Purchase Plan, as Amended and Restated September 23, 2013.*</u>	10-K	000-30205	November 20, 2013
10.22	<u>Cabot Microelectronics Corporation 401(k) Plan, as amended.*</u>	10-Q	000-30205	

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			February 8, 2010
10.23	<u>Form of Amended and Restated Change in Control Severance Protection Agreement.**</u>	10-K 000-30205	November 25, 2008
10.28	<u>Directors' Deferred Compensation Plan, as amended September 23, 2008.*</u>	10-K 000-30205	November 25, 2008
10.30	<u>Form of Deposit Share Agreement.***</u>	10-Q 000-30205	February 8, 2013
10.33	<u>Adoption Agreement, as amended September 23, 2008, of Cabot Microelectronics Corporation Supplemental Employee Retirement Plan.*</u>	10-K 000-30205	November 25, 2008
10.34	<u>Code of Business Conduct.</u>	10-Q 000-30205	February 8, 2011
10.36	<u>Directors' Cash Compensation Umbrella Program.*</u>	10-K 000-30205	December 10, 2003
10.38	<u>Employment Offer Letter dated November 2, 2003.*</u>	10-Q 000-30205	February 12, 2004

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10.46	<u>Non-Employee Directors' Compensation Summary effective March 2011.*</u>	10-Q 000-30205	February 8, 2011
10.51	<u>First Amendment to the Employment Offer Letter dated November 2, 2003.*</u>	10-K 000-30205	November 25, 2008
10.53	<u>Cabot Microelectronics Corporation Supplemental Employee Retirement Plan, as amended.*</u>	10-K 000-30205	November 25, 2008
10.54	<u>Cabot Microelectronics Corporation Annual Incentive and Sales Incentive Programs.*</u>	10-Q 000-30205	February 8, 2011
10.57	<u>Adoption Agreement, as amended January 1, 2010, of Cabot Microelectronics Corporation 401(k) Plan.*</u>	10-Q 000-30205	February 8, 2010
10.58	<u>Employee Stock Purchase Plan Prospectus as of November 24, 2010.*</u>	10-Q 000-30205	February 8, 2011
10.60	<u>Conformed Credit Agreement dated February 13, 2012 among Cabot Microelectronics Corporation, as Borrower, Bank of America, N.A., as Administrative Agent, Bank of America Merrill Lynch and J.P. Morgan Securities LLC, as Joint Lead Arrangers and Joint Book Managers, JPMorgan Chase Bank, N.A., as Syndication Agent, and Wells Fargo Bank, National Association, as Documentation Agent.</u>	10-Q 000-30205	August 8, 2014
10.61	<u>Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan, as amended effective March 7, 2017. *</u>	10-Q 000-30205	May 5, 2017
10.62	<u>Form of Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Non-Qualified Stock Option Grant Agreement (employees (including executive officers)).*</u>	10-Q 000-30205	February 8, 2013
10.63	<u>Form of Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Restricted Stock Award Agreement (employees (including executive officers)).*</u>	10-Q 000-30205	February 8, 2013
10.64	<u>Form of Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Non-Qualified Stock Option Grant Agreement (non-employee directors).*</u>	10-Q 000-30205	August 8, 2012
10.65	<u>Form of Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Restricted Stock Units Award Agreement (non-employee directors).*</u>	10-Q 000-30205	August 8, 2012
10.66	<u>Amendment No. 1 to Credit Agreement dated as of June 27, 2014 among Cabot Microelectronics Corporation, as Borrower, each lender party, Bank of America, N.A., as Administrative Agent, and each of the Guarantors.</u>	10-Q 000-30205	August 8, 2014
10.67	<u>Employment Offer Letter dated December 12, 2014 (William P. Noglows).</u>	10-Q 000-30205	February 6, 2015
10.68	<u>Employment Offer Letter dated December 12, 2014 (David H. Li).</u>	10-Q 000-30205	February 6, 2015
10.69	<u>Cabot Microelectronics Corporation Short Term Incentive Program</u>	10-Q 000-30205	February 8, 2016
10.70	<u>Cabot Microelectronics Corporation 2012 Omnibus Incentive Plan Fiscal Year 20[ ] Restricted Unit Award Agreement for United States Employees</u>	10-Q 000-30205	February 8, 2016
21.1	<u>Subsidiaries of Cabot Microelectronics Corporation.</u>		
23.1	<u>Consent of Independent Registered Public Accounting Firm.</u>		
24.1	<u>Power of Attorney.</u>		
31.1	<u>Certification of Chief Executive Officer as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u>		
31.2	<u>Certification of Chief Financial Officer as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u>		
32.1	<u>Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u>		



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\* Management contract, or compensatory plan or arrangement.

\*\* Substantially similar change in control severance protection agreements have been entered into with David H. Li, H. Carol Bernstein, Yumiko Damashek, Richard Hui, William S. Johnson, Thomas F. Kelly, Ananth Naman, Lisa A. Polezoes, Thomas S. Roman, and Daniel D. Woodland, with differences only in the amount of payments and benefits to be received by such persons.

\*\*\* Substantially similar deposit share agreements have been entered into with David H. Li, H. Carol Bernstein, William S. Johnson, Lisa A. Polezoes, and Thomas S. Roman with differences only in the amount of initial deposit made and deposit shares purchased by such persons.



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**SIGNATURES**

Pursuant to the requirements of section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized:

**CABOT MICROELECTRONICS CORPORATION**

Date: November 15, 2017 /s/ DAVID H. LI  
David H. Li  
President and Chief Executive Officer  
[Principal Executive Officer]

Date: November 15, 2017 /s/ WILLIAM S. JOHNSON  
William S. Johnson  
Executive Vice President and Chief Financial Officer  
[Principal Financial Officer]

Date: November 15, 2017 /s/ THOMAS S. ROMAN  
Thomas S. Roman  
Corporate Controller  
[Principal Accounting Officer]

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Date: November 15, 2017 /s/ WILLIAM P. NOGLOWS\*  
William P. Noglows  
Chairman of the Board  
[Director]

Date: November 15, 2017 /s/ DAVID H. LI  
David H. Li  
President and Chief Executive Officer  
[Director]

Date: November 15, 2017 /s/ RICHARD S. HILL\*  
Richard S. Hill  
[Director]

Date: November 15, 2017 /s/ BARBARA A. KLEIN\*  
Barbara A. Klein  
[Director]

Date: November 15, 2017 /s/ PAUL J. REILLY\*  
Paul J. Reilly  
[Director]

Date: November 15, 2017 /s/ SUSAN M. WHITNEY\*  
Susan M. Whitney  
[Director]

Date: November 15, 2017 /s/ GEOFFREY WILD\*  
Geoffrey Wild  
[Director]

\* by H. Carol Bernstein as Attorney-in-fact pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended.

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