

As filed with the Securities and Exchange Commission on January __, 2000
Registration No. 333-

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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-3

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

EMCORE CORPORATION
(Exact name of registrant as specified in its charter)

NEW JERSEY
(State or other jurisdiction of
incorporation or organization)

22-2746503
(I.R.S. Employer
Identification No.)

394 ELIZABETH AVENUE, SOMERSET, NEW JERSEY 08873
(732) 271-9090
(Address, including zip code, and telephone number, including
area code, of registrant's agent for service and principal executive offices)

THOMAS G. WERTHAN
EMCORE CORPORATION
394 ELIZABETH AVENUE
SOMERSET, NEW JERSEY 08873
(732) 271-9090
(Name, address, including zip code, and telephone number,
including area code, of agent for service)

WITH COPIES TO:

JORGE L. FREELAND, ESQ.
WHITE & CASE LLP
200 SOUTH BISCAYNE BLVD.
MIAMI, FLORIDA 33131
TEL: (305) 371-2700
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Approximate date of commencement of proposed sale to the public: as
soon as practicable after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered
pursuant to dividend or interest reinvestment plans, please check the following
box. []

If any of the securities being registered on this Form are to be
offered on a delayed or continuous basis pursuant to Rule 415 under the
Securities Act of 1933, check the following box. [x]

If this Form is filed to register additional securities for an offering
pursuant to Rule 462(b) under the Securities Act of 1933, please check the
following box and list the Securities Act of 1933 registration statement number
of the earlier effective registration statement for the same offering. []

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act of 1933, check the following box and list the Securities Act of 1933 registration statement number of the earlier effective registration statement for the same offering. []

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. []

CALCULATION OF REGISTRATION FEE

TITLE OF SHARES TO BE REGISTERED	AMOUNT TO BE REGISTERED(1)	PROPOSED MAXIMUM AGGREGATE PRICE PER UNIT	PROPOSED MAXIMUM AGGREGATE OFFERING PRICE(2)	AMOUNT OF REGISTRATION FEE
Common Stock, no par value	2,000,000	\$41.50	\$83,000,000	\$21,912

- (1) This Registration Statement shall also cover any additional shares of Common Stock which are issued by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the Registrant's receipt of consideration which results in an increase in the number of the outstanding shares of the Registrant's Common Stock.
- (2) Estimated solely for calculating the amount of the registration fee pursuant to Rule 457(c). The price and fee are based upon the average of the high and low sales prices of shares of common stock on January 12, 2000 as reported on The Nasdaq National Market.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(A) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(A), MAY DETERMINE.

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. WE MAY NOT SELL THESE SECURITIES UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES AND IT IS NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE IN WHICH SUCH OFFER OR SALE IS NOT PERMITTED.

Subject to Completion, Dated January 14, 2000

PROSPECTUS

2,000,000 SHARES

EMCORE CORPORATION

COMMON STOCK

OFFERING BY THE COMPANY

- o We have registered up to 2,000,000 shares of our common stock for sale to the public.
- o We may offer the shares through agents that we designate from time to time or to or through underwriters or dealers. If any agents or underwriters are involved in the sale of the shares, their names and any applicable purchase price, fee, commission or discount arrangement between them will be set forth in a supplement to this prospectus. No shares may be sold without delivery of the applicable prospectus supplement.

INVESTING IN OUR COMMON STOCK INVOLVES RISKS. YOU
SHOULD CAREFULLY CONSIDER THE RISK FACTORS
BEGINNING ON PAGE 3 BEFORE PURCHASING OUR
COMMON STOCK.

OUR COMMON STOCK

- o Our common stock trades on the Nasdaq National Market under the symbol "EMKR."
- o On January 12, 2000, the closing price of our common shares on the Nasdaq National Market was \$41.875 per share.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

THE DATE OF THIS PROSPECTUS IS JANUARY 14, 2000

[BEGIN INSIDE COVER]

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the SEC using a "shelf" registration process. Under this shelf registration process, the Company may, from time to time, sell its shares of common stock, no par value, in one or more offerings. Please carefully read both this prospectus and any applicable prospectus supplement together with additional information described under the heading "Where You Can Find More Information and Incorporation by Reference."

You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone to provide you with information that is different from what is contained in this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities in any jurisdiction where it is unlawful to do so. You should not assume that the information contained in this prospectus is accurate as of any date other than its date, and neither the delivery of this prospectus nor the sale of securities hereunder shall create any implication to the contrary.

In this prospectus, the "Company," "EMCORE," "we," "us" and "our" refer to EMCORE Corporation, and its subsidiaries.

[END INSIDE COVER]

EMCORE CORPORATION

EMCORE designs, develops and manufactures compound semiconductor wafers and devices and is a leading developer and manufacturer of the tools and manufacturing processes used to fabricate compound semiconductor wafers and devices. Our products and technology enable our customers, both in the United States and internationally, to manufacture commercial volumes of high-performance electronic devices using compound semiconductors. Our products are used in a wide variety of applications in the communications (satellite, data, telecommunications and wireless), consumer and automotive electronics, computers and peripherals, and lighting markets. EMCORE's customers include AMP Incorporated, Hewlett Packard, General Motors, Hughes-Spectrolab, Lucent Technologies, Inc., Siemens AG and 12 of the largest electronics manufacturers in Japan.

Compound semiconductors are the key components of electronic systems and electronic circuits and are now used in today's most advanced information systems. Compound semiconductors are composed of two or more elements and usually consist of a metal such as gallium, aluminum or indium and a non-metal such as arsenic, phosphorus or nitrogen. These elements are combined in our proprietary manufacturing process to create a round disk, or wafer, that has multiple layers of thin films of semiconductors on it. The wafers are further processed to create devices that are ready to be packaged by our customers for use in their products, such as solar cells, lasers and transistors. Many compound semiconductor materials have unique physical properties that allow electrons to move at least four times faster than through semiconductors based on silicon. Advantages of compound semiconductor devices over silicon devices include:

- operation at higher speeds;
- lower power consumption;
- less noise and distortion; and
- the ability to emit and detect light, known as optoelectronic properties.

Although compound semiconductors are more expensive to manufacture than the more traditional silicon-based semiconductors that are used in most computers, electronics manufacturers are increasingly integrating compound semiconductors into their products in order to achieve higher performance.

We were incorporated in the State of New Jersey in September 1986. Our principal executive offices are located at 394 Elizabeth Avenue, Somerset, New Jersey 08873, and our telephone number is (732) 271-9090. You can reach our web site at <http://www.emcore.com>. Our web site is not part of this prospectus. EMCORE and TurboDisc are registered trademarks of EMCORE and Gigalase, Gigarray and the EMCORE logo are trademarks of EMCORE. Each trademark, trade name or service mark of any other company appearing in this prospectus belongs to its holder.

RISK FACTORS

You should carefully consider the following risks, together with the other information contained in this prospectus, before you decide whether to purchase shares of our common stock. If any of the following risks actually occur, our business, financial condition or results of operations would likely suffer. In such case, the trading price of our common stock could decline, and you may lose all or part of the money you paid to buy our common stock.

This prospectus contains forward-looking statements based on our current expectations, assumptions, estimates and projections about EMCORE and our industry. These forward-looking statements involve numerous risks and uncertainties. Our actual results could differ materially from those anticipated in such forward-looking statements as a result of certain factors, as more fully described in this section and elsewhere in this prospectus. We undertake no obligation to update publicly any forward-looking statements for any reason, even if new information becomes available or other events occur in the future.

WE EXPECT TO CONTINUE TO INCUR OPERATING LOSSES.

We started operations in 1984 and as of September 30, 1999 had an accumulated deficit of \$83.3 million. We incurred net losses of \$5.6 million in fiscal 1997, \$36.4 million in fiscal 1998 and \$22.7 million in fiscal 1999. We expect to continue to incur losses. To support our growth, we have increased our expense levels and our investments in inventory and capital equipment. As a result, we will need to significantly increase revenues and profit margins to become and stay profitable. If our sales and profit margins do not increase to support the higher levels of operating expenses and if our new product offerings are not successful, our business, financial condition and results of operations will be materially and adversely affected.

OUR RAPID GROWTH PLACES A STRAIN ON OUR RESOURCES.

We are experiencing rapid growth, having added a significant number of new employees, acquired MicroOptical Devices, Inc., or MODE, and entered into joint ventures with General Electric Lighting, Uniroyal Technology Corporation, Optek Technology, Inc. and Union Miniere Inc. We have expanded our facilities to include two manufacturing facilities in Albuquerque, New Mexico in addition to our original facility in Somerset, New Jersey. Our joint venture with Uniroyal Technology Corporation has leased a manufacturing facility in Tampa, Florida. This growth has placed and will continue to place a significant strain on our management, financial, sales and other employees and on our internal systems and controls. If we are unable to effectively manage multiple facilities and multiple joint ventures in geographically distant locations, our business, financial condition and results of operations will be materially and adversely affected. We are also in the process of installing new manufacturing software for all of our facilities and are evaluating replacing our accounting and purchasing systems. Most of the new manufacturing software is customized to our particular business and manufacturing processes. It will take time and require evaluation to eliminate all of the bugs in the software and to train personnel to use the new software. In this transition we may experience delays in production, cost overruns and disruptions in our operations.

SINCE THE TECHNOLOGY IN THE COMPOUND SEMICONDUCTOR INDUSTRY RAPIDLY CHANGES, WE MUST CONTINUALLY IMPROVE EXISTING PRODUCTS, DESIGN AND SELL NEW PRODUCTS AND MANAGE THE COSTS OF RESEARCH AND DEVELOPMENT IN ORDER TO EFFECTIVELY COMPETE.

We compete in markets characterized by rapid technological change, evolving industry standards and continuous improvements in products. Due to constant changes in these markets, our future success depends on our ability to improve our manufacturing processes and tools and our products. For example, our TurboDisc production systems must remain competitive on the basis of cost of ownership and process performance. To remain competitive we must continually introduce manufacturing tools with higher capacity and better production yields.

We have recently introduced a number of new products and, in connection with recent joint ventures and internal development, we will be introducing additional new products in the near future. The commercialization of new products involves substantial expenditures in research and development, production and marketing. We may be unable to successfully design or manufacture these new products and may have difficulty penetrating new markets.

In addition, many of our new products are being incorporated into our customers' new products for new applications, such as high speed computer networks.

Because it is generally not possible to predict the amount of time required and the costs involved in achieving certain research, development and engineering objectives, actual development costs may exceed budgeted amounts and estimated product development schedules may be extended. Our business, financial condition and results of operations may be materially and adversely affected if:

- we are unable to improve our existing products on a timely basis;
- our new products are not introduced on a timely basis;
- we incur budget overruns or delays in our research and development efforts; or
- our new products experience reliability or quality problems.

FLUCTUATIONS IN OUR QUARTERLY OPERATING RESULTS MAY NEGATIVELY IMPACT OUR STOCK PRICE.

Our revenues and operating results may vary significantly from quarter to quarter due to a number of factors particular to EMCORE and the compound semiconductor industry. Not all of these factors are in our control. These factors include:

- the volume and timing of orders for our products, particularly TurboDisc systems, which have an average selling price in excess of \$1 million;
- the timing of our announcement and introduction of new products and of similar announcements by our competitors;
- downturns in the market for our customers' products;
- regional economic conditions, particularly in Asia where we derive a significant portion of our revenues; and
- price volatility in the compound semiconductor industry.

These factors may cause our operating results for future periods to be below the expectations of analysts and investors. This may cause a decline in the price of our common stock.

OUR JOINT VENTURE PARTNERS, WHO HAVE CONTROL OF THESE VENTURES, MAY MAKE DECISIONS THAT WE DO NOT AGREE WITH AND THAT ADVERSELY AFFECT OUR NET INCOME.

Since December 1997, we have established four joint ventures (with General Electric Lighting, Uniroyal Technology Corporation, Union Miniere, Inc., and Optek Technology, Inc.). Each of our joint ventures involves the creation of a separate company, and we do not have a majority interest in any of these entities. Each of these joint ventures is governed by a board of managers with representatives from both the strategic partner and us. Many fundamental decisions must be approved by both parties to the joint venture, which means we will be unable to direct the operation and direction of these joint ventures without the agreement of our joint venture partners. If we are unable to agree on important issues with a joint venture partner, the business of that joint venture may be delayed or interrupted, which may, in turn, materially and adversely affect our business, financial condition and results of operations.

We have devoted and we will be required to continue to devote significant funds and technologies to our joint ventures to develop and enhance their products. In addition, our joint ventures will require that some of our employees devote much of their time to joint venture projects. This will place a strain on our management, scientific, financial and sales employees. If our joint ventures are unsuccessful in developing and marketing their products, our business, financial condition and results of operations will be materially and adversely affected.

General Electric Lighting and we have agreed that our joint venture will be the sole vehicle for each party's participation in the solid state lighting market. We and General Electric Lighting have also agreed to several limitations during the life of the venture and thereafter relating to use that each of us can make of the joint venture's technology. One consequence of these limitations is that in certain circumstances, such as a material default by us, we would not be permitted to use the joint venture's technology to compete against General Electric Lighting in the solid state lighting market.

SINCE A LARGE PERCENTAGE OF OUR REVENUES ARE FROM FOREIGN SALES, CERTAIN EXPORT RISKS MAY DISPROPORTIONATELY AFFECT OUR REVENUES.

Sales to customers located outside the United States accounted for approximately 42.0% of our revenues in fiscal 1997, 39.1% of our revenues in fiscal 1998 and 52.5% of our revenues in fiscal 1999. Sales to customers in Asia represent the majority of our international sales. We believe that international sales will continue to account for a significant percentage of our revenues. Because of this, the following export risks may disproportionately affect our revenues:

- political and economic instability may inhibit export of our systems and devices and limit potential customers' access to dollars;
- shipping and installation costs of our systems may increase;
- we have experienced and may continue to experience difficulties in the timeliness of collection of foreign accounts receivable and have been forced to write off receivables from a foreign customer;
- a strong dollar may make our systems less attractive to foreign purchasers who may decide to postpone making the capital expenditure;
- tariffs and other barriers may make our systems and devices less cost competitive;
- we may have difficulty in staffing and managing our international operations;
- the laws of certain foreign countries may not adequately protect our trade secrets and intellectual property; and
- potentially adverse tax consequences to our customers may make our systems and devices not cost competitive.

WE WILL LOSE SALES IF WE ARE UNABLE TO OBTAIN GOVERNMENT AUTHORIZATION TO EXPORT OUR PRODUCTS.

Exports of our products to certain destinations, such as the People's Republic of China, Malaysia and Taiwan, may require pre-shipment authorization from U.S. export control authorities, including the U.S. Departments of Commerce and State. Authorization may be conditioned on end-use restrictions. On certain occasions, we have been denied authorization, particularly with respect to the People's Republic of China. Failure to receive these authorizations may materially and adversely affect our revenues and in turn our business, financial condition and results of operations from international sales. Beginning April 1999, exports of all satellites and associated components require a license from the Department of State. This may cause delays in shipping solar cells abroad. Delays in receiving export licenses for solar cells may materially and adversely affect our revenues and in turn our business, financial condition and results of operations.

THE LOSS OF SALES TO GENERAL MOTORS OR OUR OTHER LARGE CUSTOMERS WOULD BE DIFFICULT TO REPLACE.

We derive a substantial portion of our revenues from a limited number of customers. General Motors, our main customer for MR sensors, accounted for approximately 15.1% of our revenues in fiscal 1997, 12.8% of our revenues in fiscal 1998 and 9.7% of our revenues in fiscal 1999. General Motors' three month strike in 1998 adversely affected our operating performance because during that time shipments of sensors to General Motors were halted. In addition to the lost revenues, we incurred the expense of paying salaries to the part of our workforce

dedicated to producing sensors. If General Motors, or any of our other significant customers, stops ordering our products, significantly reduces the volume of these orders, or cancels, delays or reschedules any orders, and we are unable to replace these orders, our business, financial condition and results of operations could be materially and adversely affected.

OUR PRODUCTS ARE DIFFICULT TO MANUFACTURE AND SMALL MANUFACTURING DEFECTS CAN ADVERSELY AFFECT OUR PRODUCTION YIELDS AND OUR OPERATING RESULTS.

The manufacture of our TurboDisc systems is a highly complex and precise process. We increasingly outsource the fabrication of certain components and sub-assemblies of our systems, often to sole source suppliers or a limited number of suppliers. We have experienced occasional delays in obtaining components and subassemblies because the manufacturing process for these items is very complex and requires long lead times. The revenues derived from sales of our TurboDisc systems will be materially and adversely affected if we are unable to obtain a high quality, reliable and timely supply of these components and subassemblies. In addition, any reduction in the precision of these components will result in sub-standard end products and will cause delays and interruptions in our production cycle.

We manufacture all of our wafers and devices in our manufacturing facilities and our joint venture with Uniroyal Technology Corporation plans to manufacture HB LED wafers and package-ready devices at its facility. Minute impurities, difficulties in the production process, defects in the layering of the devices' constituent compounds, wafer breakage or other factors can cause a substantial percentage of wafers and devices to be rejected or numerous devices on each wafer to be non-functional. These factors can result in lower than expected production yields, which would delay product shipments and may materially and adversely affect our operating results. Because the majority of our costs of manufacture are relatively fixed, the number of shippable devices per wafer for a given product is critical to our financial results. Additionally, because we manufacture all of our products at our facilities in Somerset, New Jersey and Albuquerque, New Mexico, and our joint venture with Uniroyal Technology Corporation will manufacture HB LED wafers and package-ready devices at its sole facility in Tampa, Florida, any interruption in manufacturing resulting from fire, natural disaster, equipment failures or otherwise would materially and adversely affect our business, financial condition and results of operations.

WE FACE LENGTHY SALES AND QUALIFICATIONS CYCLES FOR OUR PRODUCTS AND, IN MANY CASES, MUST INVEST A SUBSTANTIAL AMOUNT OF TIME AND FUNDS BEFORE WE RECEIVE ORDERS.

Sales of our TurboDisc systems primarily depend upon the decision of a prospective customer to increase its manufacturing capacity, which typically involves a significant capital commitment by the customer. Customers usually place orders with us on average two to nine months after our initial contact with them. We often experience delays in obtaining system sales orders while customers evaluate and receive internal approvals for the purchase of these systems. These delays may include the time necessary to plan, design or complete a new or expanded compound semiconductor fabrication facility. Due to these factors, we expend substantial funds and sales, marketing and management efforts to sell our compound semiconductor production systems. These expenditures and efforts may not result in sales.

In order to expand our materials production capabilities, we have dedicated a number of our TurboDisc systems to the manufacture of wafers and devices. Several of our products are currently being tested to determine whether they meet customer or industry specifications. During this qualification period, we invest significant resources and dedicate substantial production capacity to the manufacture of these new products, prior to any commitment to purchase by the prospective customer and without generating significant revenues from the qualification process. If we are unable to meet these specifications or do not receive sufficient orders to profitably use the dedicated production capacity, our business, financial condition and results of operations would be materially and adversely affected.

INDUSTRY DEMAND FOR SKILLED EMPLOYEES, PARTICULARLY SCIENTIFIC AND TECHNICAL PERSONNEL WITH COMPOUND SEMICONDUCTOR EXPERIENCE, EXCEEDS THE NUMBER OF SKILLED PERSONNEL AVAILABLE.

Our future success depends, in part, on our ability to attract and retain certain key personnel, including scientific, operational and management personnel. We anticipate that we will need to hire additional skilled

personnel to continue to expand all areas of our business. The competition for attracting and retaining these employees, especially scientists, is intense. Because of this intense competition for these skilled employees, we may be unable to retain our existing personnel or attract additional qualified employees in the future. If we are unable to retain our skilled employees and attract additional qualified employees to keep up with our expansion, our business, financial condition and results of operations will be materially and adversely affected.

PROTECTING OUR TRADE SECRETS IS CRITICAL TO OUR ABILITY TO EFFECTIVELY COMPETE FOR BUSINESS.

Our success and competitive position depend on protecting our trade secrets and other intellectual property. Our strategy is to rely more on trade secrets than patents to protect our manufacturing and sales processes and products, but reliance on trade secrets is only an effective business practice insofar as trade secrets remain undisclosed and a proprietary product or process is not reverse engineered or independently developed. We take certain measures to protect our trade secrets, including executing non-disclosure agreements with our employees, joint venture partners, customers and suppliers. If parties breach these agreements or the measures we take are not properly implemented, we may not have an adequate remedy. Disclosure of our trade secrets or reverse engineering of our proprietary products, processes or devices would materially and adversely affect our business, financial condition and results of operations.

Although we currently hold 11 U.S. patents, these patents do not protect any material aspects of the current or planned commercial versions of our systems, wafers or devices. We are actively pursuing patents on some of our recent inventions, but these patents may not be issued. Even if these patents are issued, they may be challenged, invalidated or circumvented. In addition, the laws of certain other countries may not protect our intellectual property to the same extent as U.S. laws.

WE MAY REQUIRE LICENSES TO CONTINUE TO MANUFACTURE AND SELL CERTAIN OF OUR COMPOUND SEMICONDUCTOR WAFERS AND DEVICES, THE EXPENSE OF WHICH MAY ADVERSELY AFFECT OUR RESULTS OF OPERATIONS.

To manufacture our wafers and devices we try to the greatest extent possible to rely on our own technology. Occasionally, we are required to obtain licenses from third parties to manufacture and sell our products. The royalty payments for these licenses can be expensive and reduce the profits that we realize from sale of our products. We may be required to pay royalties to Rockwell International Corporation for certain of our past sales of wafers and devices to customers who do not hold licenses from Rockwell International Corporation. If we are required to pay significant royalties in connection with these sales, our business, financial condition and results of operations may be materially and adversely affected. The failure to obtain or maintain these licenses on commercially reasonable terms may materially and adversely affect our business, financial condition and results of operations.

INTERRUPTIONS IN OUR BUSINESS AND A SIGNIFICANT LOSS OF SALES TO ASIA MAY RESULT IF OUR PRIMARY ASIAN DISTRIBUTOR FAILS TO EFFECTIVELY MARKET AND SERVICE OUR PRODUCTS.

We rely on a single marketing, distribution and service provider, Hakuto Co. Ltd. to market and service many of our products in Japan, China and Singapore. Hakuto is one of our shareholders and Hakuto's president is a member of our Board of Directors. We have distributorship agreements with Hakuto which expire in March 2008 and give Hakuto exclusive distribution rights for certain of our products in Japan. Hakuto's failure to effectively market and service our products or termination of our relationship with Hakuto would result in significant delays or interruption in our marketing and service programs in Asia. This would materially and adversely affect our business, financial condition and results of operations.

YEAR 2000 PROBLEMS MAY DISRUPT OUR BUSINESS AND THE COSTS TO CORRECT THESE PROBLEMS MAY BE MATERIAL.

Even though the date is now past January 1, 2000, and we have not experienced any immediate adverse impact from the transition to the Year 2000, we cannot provide assurance that our suppliers and customers have not been affected in a manner that is not yet apparent. In addition, certain computer programs which were date sensitive to the Year 2000 may not have been programmed to process the Year 2000 as a leap year, and any negative consequential effects remain unknown. As a result, we will continue to monitor our Year 2000 compliance and the Year 2000 compliance of our suppliers and customers.

OUR MANAGEMENT'S STOCK OWNERSHIP GIVES THEM THE POWER TO CONTROL BUSINESS AFFAIRS AND PREVENT A TAKEOVER THAT COULD BE BENEFICIAL TO UNAFFILIATED SHAREHOLDERS.

Certain members of our management, specifically Thomas J. Russell, Chairman of our Board, Reuben F. Richards, President, Chief Executive Officer and a director, and Robert Louis-Dreyfus, a director, are former members of Jesup & Lamont Merchant Partners, L.L.C. As of September 30, 1999, they collectively beneficially own approximately 29.2% of our common stock immediately prior to this offering and assuming the sale of all of the shares offered pursuant to this prospectus, will own approximately 27.5% of our common stock after the offering. Accordingly, such persons will continue to hold sufficient voting power to control our business and affairs for the foreseeable future. This concentration of ownership may also have the effect of delaying, deferring or preventing a change in control of our company, which could have a material adverse effect on our stock price.

UNSUCCESSFUL CONTROL OF THE HAZARDOUS RAW MATERIALS USED IN OUR MANUFACTURING PROCESS COULD RESULT IN COSTLY REMEDIATION FEES, PENALTIES OR DAMAGES UNDER ENVIRONMENTAL AND SAFETY REGULATIONS.

The production of wafers and devices involves the use of certain hazardous raw materials, including, but not limited to, ammonia, phosphine and arsene. If our control systems are unsuccessful in preventing a release of these materials into the environment or other adverse environmental conditions occur, we could experience interruptions in our operations and incur substantial remediation and other costs. Failure to comply with environmental and health and safety laws and regulations may materially and adversely affect our business, financial condition and results of operations.

Our board of directors is authorized to issue up to an additional 4,332,353 shares of preferred stock with such dividend rates, liquidation preferences, voting rights, redemption and conversion terms and privileges as our board of directors, in its sole discretion, may determine. The issuance of additional shares of preferred stock may result in a decrease in the value or market price of our common stock, or our board of directors could use the preferred stock to delay or discourage hostile bids for control of us in which shareholders may receive premiums for their common stock or to make the possible sale of the company or the removal of our management more difficult. The issuance of additional shares of preferred stock could adversely affect the voting and other rights of the holders of common stock.

CERTAIN PROVISIONS OF NEW JERSEY LAW AND OUR CHARTER MAY MAKE A TAKEOVER OF OUR COMPANY DIFFICULT EVEN IF SUCH TAKEOVER COULD BE BENEFICIAL TO SOME OF OUR SHAREHOLDERS.

New Jersey law contains and our certificate of incorporation, as amended, contains certain provisions that could delay or prevent a takeover attempt that our shareholders may consider in their best interests. Our board of directors is divided into three classes. Directors are elected to serve staggered three-year terms and are not subject to removal except for cause by the vote of the holders of at least 80% of our capital stock. In addition, approval by the holders of 80% of our voting stock is required for certain business combinations unless these transactions meet certain fair price criteria and procedural requirements or are approved by two-thirds of our continuing directors. We may in the future adopt other measures that may have the effect of delaying or discouraging an unsolicited takeover, even if the takeover were at a premium price or favored by a majority of unaffiliated shareholders. Certain of these measures may be adopted without any further vote or action by our shareholders.

FUTURE SALES BY EXISTING SHAREHOLDERS COULD DEPRESS THE MARKET PRICE OF OUR COMMON STOCK AND MAKE IT MORE DIFFICULT FOR US TO SELL STOCK IN THE FUTURE.

On October 6, 1999 a registration statement covering 2,521,361 shares of our common stock became effective. The shares registered thereunder are eligible for resale in the market without restriction. Sales of any substantial number of shares of our common stock in the public market may have an adverse effect on the market price of our common stock. The average daily trading volume of our common stock has been very low. Any sustained sales of shares by our existing or future shareholders or any increase in the average volume of shares traded in the public market may adversely affect the market price of our common stock. These sales also might make it more difficult for us to sell equity or equity-related securities, including the common stock registered hereunder, in the future at a time and price that we deem appropriate. The shelf registration declared effective on

October 6, 1999 will remain effective until November 17, 2003 or such earlier time as all of the shares of our common stock are no longer restricted under Rule 144.

At present we have a substantial number of shares that are issuable upon the exercise of outstanding warrants and stock options.

USE OF PROCEEDS

We currently intend to use the net proceeds from the sale of our common stock to fund research and development, capital expenditures, acquisitions, additional investments in joint ventures, working capital and for other general corporate purposes. Depending on our circumstances at the time any or all of the net proceeds from such sales become available, if at all, we reserve the right to use such net proceeds for purposes other than those set forth above.

PLAN OF DISTRIBUTION

Any of the shares being offered under this prospectus may be sold in any one or more of the following ways from time to time:

- o through agents,
- o to or through underwriters,
- o through dealers, and
- o directly by us to purchasers.

The distribution of the shares may be effected from time to time in one or more transactions at a fixed price or prices, which may be changed, at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at negotiated prices.

Offers to purchase shares may be solicited by agents designated by us from time to time. Any agent involved in the offer or sale of the shares under this prospectus will be named, and any commissions payable by us to these agents will be set forth, in a related prospectus supplement. Unless otherwise indicated in a prospectus supplement, any agent will be acting on a reasonable best efforts basis for the period of its appointment. Any agent may be deemed to be an underwriter, as the term is defined in the Securities Act, of the shares so offered and sold.

If shares are sold by means of an underwritten offering, we will execute an underwriting agreement with an underwriter or underwriters at the time an agreement for such sale is reached, and the names of the specific managing underwriter or underwriters, as well as any other underwriters, the respective amounts underwritten and the terms of the transaction, including commissions, discounts and any other compensation of the underwriters and dealers, if any, will be set forth in a related prospectus supplement. That prospectus supplement and this prospectus will be used by the underwriters to make resales of the shares. If underwriters are used in the sale of any shares in connection with this prospectus, those shares will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including negotiated transactions, at fixed public offering prices or at varying prices determined by the underwriters and us at the time of sale. Shares may be offered to the public either through underwriting syndicates represented by managing underwriters or directly by one or more underwriters. If any underwriter or underwriters are used in the sale of shares, unless otherwise indicated in a related prospectus supplement, the underwriting agreement will provide that the obligations of the underwriters are subject to some conditions precedent and that the underwriters with respect to a sale of these shares will be obligated to purchase all such shares if any are purchased.

We may grant to the underwriters options to purchase additional shares, to cover over-allotments, if any, at the public offering price, with additional underwriting commissions or discounts, as may be set forth in a related prospectus supplement. If we grant any over-allotment option, the terms of that over-allotment option will be set forth in the prospectus supplement for these shares.

If a dealer is utilized in the sale of the shares in respect of which this prospectus is delivered, we will sell

these shares to the dealer as principal. The dealer may then resell such shares to the public at varying prices to be determined by such dealer at the time of resale. Any such dealer may be deemed to be an underwriter, as such term is defined in the Securities Act, of the shares so offered and sold. The name of the dealer and the terms of transaction will be set forth in the prospectus supplement relating to those offers and sales.

Offers to purchase shares may be solicited directly by us and those sales may be made by us directly to institutional investors or others, who may be deemed to be underwriters within the meaning of the Securities Act with respect to any resale of those shares. The terms of any sales of this type will be described in the prospectus supplement.

If so indicated in a related prospectus supplement, we may authorize agents and underwriters to solicit offers by certain institutions to purchase shares from us at the public offering price set forth in a related prospectus supplement as part of delayed delivery contracts providing for payment and delivery on the date or dates stated in a related prospectus supplement. Such delayed delivery contracts will be subject to only those conditions set forth in a related prospectus supplement. A commission indicated in a related prospectus supplement will be paid to underwriters and agents soliciting purchases of shares pursuant to delayed delivery contracts accepted by us.

Agents, underwriters and dealers may be entitled under relevant agreements with us to indemnification by us against some liabilities, including liabilities under the Securities Act, or to contributions with respect to payments which such agents, underwriters and dealers may be required to make in respect thereof.

Agents, underwriters and dealers may be customers of, engage in transactions with, or perform services for, us in the ordinary course of our business.

DESCRIPTION OF SECURITIES

Our authorized capital stock consists of 50,000,000 shares of common stock, no par value per share, and 5,882,352 shares of preferred stock, par value \$.0001 per share.

As of January 3, 2000, there were 13,774,631 shares of common stock outstanding, held of record by approximately 2,713 shareholders. The holders of common stock are entitled to one vote per share on all matters to be voted upon by the shareholders. Subject to preferences that may be applicable to any outstanding preferred stock, the holders of common stock are entitled to receive ratably dividends, if any, as may be declared from time to time by our board of directors out of funds legally available. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share ratably in assets remaining after payment of liabilities, subject to prior distribution rights of preferred stock, if any, then outstanding. The common stock has no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and non-assessable, and the shares of common stock to be issued upon completion of any offering will be fully paid and non-assessable.

LEGAL MATTERS

The validity of the common stock offered hereby will be passed upon for EMCORE by Howard W. Brodie, Esq., Vice President and General Counsel, who may rely upon Dillon, Bitar & Luther, New Jersey counsel for EMCORE as to matters of New Jersey law. As of September 29, 1999, Mr. Brodie held options to purchase an aggregate of 50,000 shares of Common Stock.

EXPERTS

The consolidated financial statements and the related financial statement schedule incorporated in this prospectus by reference from the Company's Annual Report on Form 10-K/A for the year ended September 30, 1999, have been audited by Deloitte & Touche LLP, independent auditors, as stated in their report, which is incorporated herein by reference, and has been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document in our public files at the SEC's offices at:

- o Judiciary Plaza
 450 Fifth Street, N.W.
 Room 1024
 Washington, D.C. 20549
- o 500 West Madison Street
 Suite 1400
 Chicago, Illinois 60606
- and
- o 7 World Trade Center
 Suite 1300
 New York, New York 10048.

Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Our SEC filings are also available to the public from the SEC's web site at <http://www.sec.gov> through the SEC's electronic data gathering analysis and retrieval system, EDGAR. Our common stock is traded on the Nasdaq National Market under the symbol "EMKR." Information about us is also available from the NASD, 1735 K Street, N.W., Washington, D.C. 20006.

The SEC allows us to "incorporate by reference" the information we file with it, which means that we can disclose important information to you by referring to those documents. The information incorporated by reference is considered to be part of this prospectus. Later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 by us:

1. EMCORE's Annual Report on Form 10-K/A for the fiscal year ended September 30, 1999;
2. The description of the common stock, contained in EMCORE's Registration Statement on Form 8-A filed pursuant to Section 12 of the Exchange Act and all amendments thereto and reports filed for the purpose of updating such description; and
3. The summary of executive compensation, contained in EMCORE'S Proxy Statement filed pursuant to Section 14 of the Exchange Act.

We will provide to you, without charge, a copy of any and all of the documents or information referred to above that we have incorporated by reference in this prospectus (other than exhibits to the documents unless those exhibits are specifically incorporated by reference into this prospectus). Requests for such copies should be directed to the following address:

EMCORE Corporation
394 Elizabeth Avenue
Somerset, New Jersey
Attn: Chief Financial Officer
Telephone (732) 271-9090.

This prospectus is part of a registration statement that we filed with the SEC. You should rely only on the information incorporated by reference or provided in this prospectus or any supplement. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus or any supplement is accurate as of any date other than the date on the front of that document.

2,000,000 SHARES OF COMMON STOCK

EMCORE CORPORATION

 PROSPECTUS

January 14, 2000

- o We have not authorized anyone to give you any information that differs from the information in this prospectus. If you receive any different information, you should not rely on it.
- o The delivery of this prospectus shall not, under any circumstances, create an implication that EMCORE Corporation is operating under the same conditions that it was operating under when this prospectus was written. Do not assume that the information contained in this prospectus is correct at any time past the date indicated.
- o This prospectus does not constitute an offer to sell, or the solicitation of an offer to buy, any securities other than the securities to which it relates.
- o This prospectus does not constitute an offer to sell, or the solicitation of an offer to buy, the securities to which it relates in any circumstances in which such offer or solicitation is unlawful.

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The following table sets forth the various expenses in connection with the sale and distribution of the securities being registered, other than underwriting discounts and commissions. All amounts shown are estimates except the Securities and Exchange Commission registration fee.

	TO BE PAID BY THE REGISTRANT
Securities and Exchange Commission registration fee	\$
Nasdaq Listing Fee.....	17,500
Accounting fees and expenses	250,000
Printing expenses	100,000
Legal fees and expenses	100,000
Other expenses	13,000
Total	----- \$ =====

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS

EMCORE's Restated Certificate of Incorporation provides that the Company shall indemnify its directors and officers to the full extent permitted by New Jersey law, including in circumstances in which indemnification is otherwise discretionary under New Jersey law.

Section 14A:2-7 of the New Jersey Business Corporation Act provides that a New Jersey corporation's:

"certificate of incorporation may provide that a director or officer shall not be personally liable, or shall be liable only to the extent therein provided, to the corporation or its shareholders for damages for breach of any duty owed to the corporation or its shareholders, except that such provision shall not relieve a director or officer from liability for any breach of duty based upon an act or omission (a) in breach of such person's duty of loyalty to the corporation or its shareholders, (b) not in good faith or involving a knowing violation of law or (c) resulting in receipt by such person of an improper personal benefit. As used in this subsection, an act or omission in breach of a person's duty of loyalty means an act or omission which that person knows or believes to be contrary to the best interests of the corporation or its shareholders in connection with a matter in which he has a material conflict of interest."

In addition, Section 14A:3-5 (1995) of the New Jersey Business Corporation Act (1995) provides as follows:

INDEMNIFICATION OF DIRECTORS, OFFICERS AND EMPLOYEES

(1) As used in this section,

(a) "Corporate agent" means any person who is or was a director, officer, employee or agent of the indemnifying corporation or of any constituent corporation absorbed by the indemnifying corporation in a consolidation or merger and any person who is or was a director, officer, trustee, employee or agent of any other enterprise, serving as such at the request of the indemnifying corporation, or of any such constituent corporation, or the legal representative of any such director, officer, trustee, employee or agent;

(b) "Other enterprise" means any domestic or foreign corporation, other than the indemnifying corporation, and any partnership, joint venture, sole proprietorship, trust or other enterprise, whether or not for profit, served by a corporate agent;

(c) "Expenses" means reasonable costs, disbursements and counsel fees;

(d) "Liabilities" means amounts paid or incurred in satisfaction of settlements, judgments, fines and penalties;

(e) "Proceeding" means any pending, threatened or completed civil, criminal, administrative or arbitral action, suit or proceeding, and any appeal therein and any inquiry or investigation which could lead to such action, suit or proceeding; and

(f) References to "other enterprises" include employee benefit plans; references to "fines" include any excise taxes assessed on a person with respect to an employee benefit plan; and references to "serving at the request of the indemnifying corporation" include any service as a corporate agent which imposes duties on, or involves services by, the corporate agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner the person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the corporation" as referred to in this section.

(2) Any corporation organized for any purpose under any general or special law of this State shall have the power to indemnify a corporate agent against his expenses and liabilities in connection with any proceeding involving the corporate agent by reason of his being or having been such a corporate agent, other than a proceeding by or in the right of the corporation, if

(a) such corporate agent acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation; and

(b) with respect to any criminal proceeding, such corporate agent had no reasonable cause to believe his conduct was unlawful. The termination of any proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, shall not of itself create a presumption that such corporate agent did not meet the applicable standards of conduct set forth in paragraphs 14A:3-5(2)(a) and 14A:3-5(2)(b).

(3) Any corporation organized for any purpose under any general or special law of this State shall have the power to indemnify a corporate agent against his expenses in connection with any proceeding by or in the right of the corporation to procure a judgment in its favor which involves the corporate agent by reason of his being or having been such corporate agent, if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation. However, in such proceeding no indemnification shall be provided in respect of any claim, issue or matter as to which such corporate agent shall have been adjudged to be liable to the corporation, unless and only to the extent that the Superior Court or the court in which such proceeding was brought shall determine upon application

that despite the adjudication of liability, but in view of all circumstances of the case, such corporate agent is fairly and reasonably entitled to indemnity for such expenses as the Superior Court or such other court shall deem proper.

(4) Any corporation organized for any purpose under any general or special law of this State shall indemnify a corporate agent against expenses to the extent that such corporate agent has been successful on the merits or otherwise in any proceeding referred to in subsections 14A:3-5(2) and 14A:3-5(3) or in defense of any claim, issue or matter therein.

(5) Any indemnification under subsection 14A:3-5(2) and, unless ordered by a court, under subsection 14A:3-5(3) may be made by the corporation only as authorized in a specific case upon a determination that indemnification is proper in the circumstances because the corporate agent met the applicable standard of conduct set forth in subsection 14A:3-5(2) or subsection 14A:3-5(3). Unless otherwise provided in the certificate of incorporation or bylaws, such determination shall be made

(a) by the board of directors or a committee thereof, acting by a majority vote of a quorum consisting of directors who were not parties to or otherwise involved in the proceeding; or

(b) if such a quorum is not obtainable, or, even if obtainable and such quorum of the board of directors or committee by a majority vote of the disinterested directors so directs, by independent legal counsel, in a written opinion, such counsel to be designated by the board of directors; or

(c) by the shareholders if the certificate of incorporation or bylaws or a resolution of the board of directors or of the shareholders so directs.

(6) Expenses incurred by a corporate agent in connection with a proceeding may be paid by the corporation in advance of the final disposition of the proceeding as authorized by the board of directors upon receipt of an undertaking by or on behalf of the corporate agent to repay such amount if it shall ultimately be determined that he is not entitled to be indemnified as provided in this section.

(7) (a) If a corporation upon application of a corporate agent has failed or refused to provide indemnification as required under subsection 14A:3-5(4) or permitted under subsections 14A:3-5(2), 14A:3-5(3) and 14A:3-5(6), a corporate agent may apply to a court for an award of indemnification by the corporation, and such court

(i) may award indemnification to the extent authorized under subsections 14A:3-5(2) and 14A:3-5(3) and shall award indemnification to the extent required under subsection 14A:3-5(4), notwithstanding any contrary determination which may have been made under subsection 14A:3-5(5); and

(ii) may allow reasonable expenses to the extent authorized by, and subject to the provisions of, subsection 14A:3-5(6), if the court shall find that the corporate agent has by his pleadings or during the course of the proceeding raised genuine issues of fact or law.

(b) Application for such indemnification may be made:

(i) in the civil action in which the expenses were or are to be incurred or other amounts were or are to be paid; or

(ii) to the Superior Court in a separate proceeding. If the application is for indemnification arising out of a civil action, it shall set forth reasonable cause for the failure to make application for such relief in the action or proceeding in which the expenses were or are to be incurred or other amounts were or are to be paid.

The application shall set forth the disposition of any previous application for indemnification and shall be made in such manner and form as may be required by the applicable rules of court or, in the absence thereof, by direction of the court to which it is made. Such application shall be upon notice to the corporation. The court may also direct that notice shall be given at the expense of the corporation to the shareholders and such other persons as

it may designate in such manner as it may require.

(8) The indemnification and advancement of expenses provided by or granted pursuant to the other subsections of this section shall not exclude any other rights, including the right to be indemnified against liabilities and expenses incurred in proceedings by or in the right of the corporation, to which a corporate agent may be entitled under a certificate of incorporation, bylaw, agreement, vote of shareholders, or otherwise; provided that no indemnification shall be made to or on behalf of a corporate agent if a judgment or other final adjudication adverse to the corporate agent establishes that his acts or omissions (a) were in breach of his duty of loyalty to the corporation or its shareholders, as defined in subsection (3) of N.J.S.14A:2-7, (b) were not in good faith or involved a knowing violation of law or (c) resulted in receipt by the corporate agent of an improper personal benefit.

(9) Any corporation organized for any purpose under any general or special law of this State shall have the power to purchase and maintain insurance on behalf of any corporate agent against any expenses incurred in any proceeding and any liabilities asserted against him by reason of his being or having been a corporate agent, whether or not the corporation would have the power to indemnify him against such expenses and liabilities under the provisions of this section. The corporation may purchase such insurance from, or such insurance may be reinsured in whole or in part by, an insurer owned by or otherwise affiliated with the corporation, whether or not such insurer does business with other insureds.

(10) The powers granted by this section may be exercised by the corporation, notwithstanding the absence of any provision in its certificate of incorporation or bylaws authorizing the exercise of such powers.

(11) Except as required by subsection 14A:3-5(4), no indemnification shall be made or expenses advanced by a corporation under this section, and none shall be ordered by a court, if such action would be inconsistent with a provision of the certificate of incorporation, a bylaw, a resolution of the board of directors or of the shareholders, an agreement or other proper corporate action, in effect at the time of the accrual of the alleged cause of action asserted in the proceeding, which prohibits, limits or otherwise conditions the exercise of indemnification powers by the corporation or the rights of indemnification to which a corporate agent may be entitled.

(12) This section does not limit a corporation's power to pay or reimburse expenses incurred by a corporate agent in connection with the corporate agent's appearance as a witness in a proceeding at a time when the corporate agent has not been made a party to the proceeding.

ITEM 16. EXHIBITS

The following exhibits are filed with this Registration Statement:

EXHIBIT NO.		DESCRIPTION
4.1	--	Restated Certificate of Incorporation, dated March 31, 1999 (incorporated by reference to Exhibit 3.1 to the registrant's annual report on Form 10-K for the fiscal year ended September 30, 1999).
4.2	--	Specimen certificate for shares of common stock (incorporated by reference to Exhibit 4.1 to Amendment No. 3 to the Registration Statement on Form S-1 (File No. 333-18565) filed with the Commission on February 24, 1997).
4.3	--	Form of \$4.08 Warrant (incorporated by reference to Exhibit 10.10 to Amendment No. 1 to the Registration Statement on Form S-1 (File No. 333-18565) filed with the Commission on February 6, 1997).
4.4	--	Form of \$10.20 Warrant (incorporated by reference to Exhibit 10.12 to Amendment No. 1 to the Registration Statement on Form S-1 (File No. 333-18565) filed with the Commission on February 6, 1997).

EXHIBIT NO.		DESCRIPTION
4.5	--	Form of \$11.375 Warrant (incorporated by reference to Exhibit 4.2 to the 1998 10-K).
4.6	--	Registration Rights Agreement relating to September 1996 warrant issuance (incorporated by reference to Exhibit 10.6 to Amendment No. 1 to the Registration Statement on Form S-1 (File No. 333-18565) filed with the Commission on February 6, 1997).
4.7	--	Registration Rights Agreement relating to December 1996 warrant issuance (incorporated by reference to Exhibit 10.7 to Amendment No. 1 to the Registration Statement on Form S-1 (File No. 333-18565) filed with the Commission on February 6, 1997).
4.8	--	Purchase Agreement, dated November 30, 1998, by and between the Company, Hakuto UMI and UTC (incorporated by reference to Exhibit 10.15 to the 1998 10-K).
4.9	--	Registration Rights Agreement, dated November 30, 1998 by and between the Company, Hakuto, UMI and UTC (incorporated by reference to Exhibit 10.16 to the 1998 10-K).
4.10	--	Agreement and Plan of Merger, dated as of December 5, 1997, among the Company, the Merger Subsidiary, MODE and the Principal Shareholders named therein (incorporated by reference to Exhibit 2 to the Company's report on Form 8-K filed with the Commission on December 22, 1997).
4.11	--	Note Purchase Agreement, dated as of May 26, 1999, by and between EMCORE Corporation and GE Capital Equity Investments, Inc (incorporated by reference to Exhibit 10.18 to Amendment No. 2 to the Registration Statement on Form S-3 (File No. 333-71791) filed with the Commission on June 9, 1999).
4.12	--	Registration Rights Agreement, dated as of May 26, 1999, by and between EMCORE Corporation and GE Capital Equity Investments, Inc. (incorporated by reference to Exhibit 10.19 to Amendment No. 2 to the Registration Statement on Form S-3 (File No. 333-71791) filed with the Commission on June 9, 1999).
4.13	--	\$22.875 Warrant issued to General Electric Company (incorporated by reference to Exhibit 10.20 to Amendment No. 2 to the Registration Statement on Form S-3 (File No. 333-71791) filed with the Commission on June 9, 1999).
5.1	--	Opinion of Howard W. Brodie, Esq.*
23.1	--	Consent of Deloitte & Touche LLP.*
23.2	--	Consent of Howard W. Brodie, Esq. (included in Exhibit 5.1).*
24.1	--	Power of Attorney (included in signature page of this Registration Statement).*

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* Filed herewith

ITEM 17. UNDERTAKINGS

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(a) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(b) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the registration statement;

(c) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; Provided however, that paragraphs (1)(a) and (1)(b) do not apply if the registration statement is on Form S-3, Form S-8 or Form F-3, and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 (the "Exchange Act") that are incorporated by reference in the registration statement.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(5) That, for purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(6) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to provisions described in Item 15 or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the

registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(7) The undersigned Registrant hereby undertakes to deliver or cause to be delivered with the prospectus, to each person to whom the prospectus is sent or given, the latest annual report to security holders that is incorporated by reference in the prospectus and furnished pursuant to and meeting the requirements of Rule 14a-3 or Rule 14c-3 under the Securities Exchange Act of 1934; and, where interim financial information required to be presented by Article 3 of Regulation S-X is not set forth in the prospectus, to deliver, or cause to be delivered to each person to whom the prospectus is sent or given, the latest quarterly report that is specifically incorporated by reference in the prospectus to provide such interim financial information.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Township of Somerset, State of New Jersey, on January 13, 2000.

EMCORE CORPORATION

By /s/ REUBEN F. RICHARDS, JR.

 Reuben F. Richards, Jr.
 President and Chief Executive
 Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints and hereby authorizes Reuben F. Richards, Jr. and Thomas G. Werthan, severally, such person's true and lawful attorneys-in-fact, with full power of substitution or resubstitution, for such person and in his name, place and stead, in any and all capacities, to sign on such person's behalf, individually and in each capacity stated below, any and all amendments, including post-effective amendments to this registration statement and to sign any and all additional registration statements relating to the same offering of securities as this registration statement that are filed pursuant to Rule 462(b) of the Securities Act, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Commission granting unto said attorneys-in-fact, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement on Form S-3 has been signed by the following persons in the capacities indicated, on January 13, 2000.

SIGNATURE

TITLE

/s/ THOMAS J. RUSSELL

Chairman of the Board and Director

 Thomas J. Russell

/s/ REUBEN F. RICHARDS, JR.

President, Chief Executive Officer and
 Director (Principal Executive Officer)

 Reuben F. Richards, Jr.

/s/ THOMAS G. WERTHAN

Vice President, Chief Financial
 Officer, and Director
 (Principal Accounting and Financial
 Officer)

 Thomas G. Werthan

/s/ RICHARD A. STALL

Director

 Richard A. Stall

/s/ CHARLES SCOTT

Director

Charles Scott

/s/ ROBERT LOUIS-DREYFUS

Director

Robert Louis-Dreyfus

/s/ HUGH H. FENWICK

Director

Hugh H. Fenwick

/s/ SHIGEO TAKAYAMA

Director

Shigeo Takayama

/s/ JOHN J. HOGAN, JR.

Director

John J. Hogan, Jr.

By: /s/ THOMAS G. WERTHAN

Thomas G. Werthan
Attorney-in-Fact

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4.7	--	Registration Rights Agreement relating to December 1996 warrant issuance (incorporated by reference to Exhibit 10.7 to Amendment No. 1 to the Registration Statement on Form S-1 (File No. 333-18565) filed with the Commission on February 6, 1997).
4.8	--	Purchase Agreement, dated November 30, 1998, by and between the Company, Hakuto UMI and UTC (incorporated by reference to Exhibit 10.15 to the 1998 10-K).
4.9	--	Registration Rights Agreement, dated November 30, 1998 by and between the Company, Hakuto, UMI and UTC (incorporated by reference to Exhibit 10.16 to the 1998 10-K).
4.10	--	Agreement and Plan of Merger, dated as of December 5, 1997, among the Company, the Merger Subsidiary, MODE and the Principal Shareholders named therein (incorporated by reference to Exhibit 2 to the Company's report on Form 8-K filed with the Commission on December 22, 1997).
4.11	--	Note Purchase Agreement, dated as of May 26, 1999, by and between EMCORE Corporation and GE Capital Equity Investments, Inc (incorporated by reference to Exhibit 10.18 to Amendment No. 2 to the

EXHIBIT NO.

DESCRIPTION

		Registration Statement on Form S-3 (File No. 333-71791) filed with the Commission on June 9, 1999).
4.12	--	Registration Rights Agreement, dated as of May 26, 1999, by and between EMCORE Corporation and GE Capital Equity Investments, Inc. (incorporated by reference to Exhibit 10.19 to Amendment No. 2 to the Registration Statement on Form S-3 (File No. 333-71791) filed with the Commission on June 9, 1999).
4.13	--	\$22.875 Warrant issued to General Electric Company (incorporated by reference to Exhibit 10.20 to Amendment No. 2 to the Registration Statement on Form S-3 (File No. 333-71791) filed with the Commission on June 9, 1999).
5.1	--	Opinion of Howard W. Brodie, Esq.*
23.1	--	Consent of Deloitte & Touche LLP.*
23.2	--	Consent of Howard W. Brodie, Esq. (included in Exhibit 5.1).*
24.1	--	Power of Attorney (included in signature page of this Registration Statement).*

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* Filed herewith

January 14, 2000

EMCORE Corporation
394 Elizabeth Avenue
Somerset, NJ 08873

Re: EMCORE Corporation
Registration Statement on Form S-3
For 2,000,000 Shares of Common Stock

Ladies and Gentlemen:

I am Vice President and General Counsel of EMCORE Corporation, a New Jersey corporation (the "Company"). In that capacity, I have participated in the preparation of, and I am familiar with the contents of the above-referenced registration statement (the "Registration Statement"), which is concurrently being filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended (the "Act"). The Registration Statement relates to 2,000,000 shares of the Company's Common Stock (the "Shares") to be issued from time to time by the Company in one or more underwritten offerings.

This opinion is being furnished in accordance with the requirements of Item 16 of Form S-3 and Item 601(b)(5)(i) of Regulation S-K.

I am familiar with the corporate proceedings of the Company relating to the authorization of issuance and sale of the Shares. I have examined such certificates of public officials and certificates of officers of the Company, and the originals (or copies thereof, certified to my satisfaction) of such corporate documents and records of the Company, and such other documents, records and papers as I have deemed relevant in order to give the opinions hereinafter set forth. In this connection, I have assumed the genuineness of signatures, the authenticity of all documents submitted to me as originals and the conformity to authentic original documents of all documents submitted to me as certified, conformed, facsimile or photostatic copies. In addition, I have relied, to the extent that I deem such reliance proper, upon such certificates of public officials and officers of the Company with respect to the accuracy of material factual matters contained therein which were not independently established.

I do not express or purport to express any opinions with respect to laws other than the Federal laws of the United States. As to all matters governed by the laws of the State of New Jersey involved in my opinions set forth below, I have relied, with your consent, upon an opinion of Dillon Bitar & Luther dated today and addressed to me.

Based upon the foregoing, I am of the opinion that the Shares, when sold in accordance with the Plan of Distribution set forth in the Registration Statement and any amendments and prospectus supplements thereto will be validly issued, fully paid and nonassessable.

I hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the use of my name under the caption "Legal Matters" in the Prospectus forming a part of the Registration Statement.

Very truly yours,

/s/ Howard W. Brodie

Howard W. Brodie
Vice President and General Counsel

INDEPENDENT AUDITORS' CONSENT

We consent to the incorporation by reference in this Registration Statement of EMCORE Corporation on Form S-3 of our report dated January 10, 2000, included in the Annual Report on Form 10-K/A of EMCORE Corporation for the year ended September 30, 1999, and to the reference to us under the heading "Experts" in the Prospectus, which is part of this Registration Statement.

Deloitte & Touche LLP
Parsippany, New Jersey
January 12, 2000