
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM S-1
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)

3674

(Primary Standard Industrial Classification Code Number)

22-2746503

(I.R.S. Employer Identification Number)

10420 Research Road, SE, Albuquerque, New Mexico, (505) 332-5000

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Hong Q. Hou, Ph.D.
Chief Executive Officer
EMCORE Corporation
10420 Research Road, SE
Albuquerque, New Mexico
(505) 332-5000**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

**Mark L. Skaist
Stradling Yocca Carlson & Rauth
660 Newport Center Drive, Suite 1600
Newport Beach, California 92660
(949) 725-4000**

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

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. ☒

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer", and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐

Non-accelerated filer ☐

Accelerated filer ☒

Smaller reporting company ☐

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be Registered ⁽¹⁾	Proposed Maximum Offering Price per Share ⁽²⁾	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, no par value per share	4,407,603	\$ 2.82	\$ 12,429,440	\$ 1,443.06

⁽¹⁾ Pursuant to Rule 416 under the Securities Act of 1933, as amended, or Securities Act, the shares being registered hereunder include such indeterminate number of shares of common stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.

⁽²⁾ Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(c) under the Securities Act using the average of the high and low sales prices of the registrant's common stock as reported on The NASDAQ Global Market on July 19, 2011.

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, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be subject to change. The selling shareholder may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell securities and it is not soliciting an offer to buy these securities in any state or jurisdiction where the offer to sell or buy is not permitted.

Preliminary Prospectus

SUBJECT TO COMPLETION, DATED JULY 25, 2011



4,407,603 Shares of Common Stock

This prospectus relates to the resale from time to time of up to 4,407,603 shares of our common stock, no par value per share, which are held by the selling shareholder named in this prospectus. We are not selling any shares of common stock in this offering and, therefore, we will not receive any proceeds from this offering. We will bear all of the expenses and fees incurred in registering the shares offered by this prospectus. Our filing of the registration statement, of which this prospectus is a part, is intended to satisfy our obligations to the selling shareholder to register for resale these shares of common stock.

The selling shareholder may, from time to time, sell, transfer, or otherwise dispose of any or all of the shares of our common stock described in this prospectus in public or private transactions, on or off The NASDAQ Global Market, at prevailing market prices, or at privately negotiated prices. The selling shareholder may sell shares of our common stock directly to purchasers or through brokers or dealers. Brokers or dealers may receive compensation in the form of discounts, concessions or commissions from the selling shareholder. See the section entitled “Plan of Distribution” beginning on page 8 of this prospectus for additional information about how the selling shareholder may conduct sales of the shares of our common stock offered by this prospectus.

Our common stock is quoted on The NASDAQ Global Market under the symbol “EMKR”. On July 20, 2011, the last reported closing sale price of our common stock was \$2.88 per share.

Investing in our common stock involves a high degree of risk. Before making any investment in our common stock, you should read and carefully consider the risks described in the section entitled “Risk Factors” beginning on page 5 of this prospectus.

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 _____, 2011.

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This prospectus is part of a registration statement on Form S-1 that we filed with the Securities and Exchange Commission, or the SEC. You should only rely on the information in this prospectus or to which we have referred you. We have not authorized anyone to provide you with information or to make any representation on our behalf that is different from that contained in this prospectus. You should not rely on any unauthorized information or representation. This prospectus relates to the resale from time to time of shares of our common stock, no par value per share, which are held by the selling shareholder under the circumstances and in states or jurisdictions where it is lawful to do so. The information in this prospectus is accurate only as of the date of this prospectus, regardless of the date of delivery of this prospectus or of any sales of these securities. Our business, financial condition, results of operations, cash flows and prospects may have changed since the date of this prospectus. This prospectus may be used only in states or jurisdictions where it is legal to sell these securities. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities and the distribution of this prospectus outside the United States. We are not making any representation to you regarding the legality of an investment in the securities offered hereby under applicable law. You should consult with your own legal advisors as to the legal, tax, business, financial and related aspect of a purchase of such securities.

Unless we state otherwise or the context indicates otherwise, references to the “Company”, “EMCORE”, “we”, “us”, and “our” in this prospectus refer to EMCORE Corporation and its subsidiaries. Our fiscal year ends on September 30 of each calendar year. For example, fiscal year 2010 refers to the fiscal year ended September 30, 2010. EMCORE is a registered trademark of EMCORE Corporation. This prospectus contains product names, trade names, and trademarks of EMCORE Corporation and other organizations.

RISK FACTORS

Your investment in our securities involves a high degree of risk. You should carefully read and consider the risks set forth under the caption “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended September 30, 2010, and any updates in our subsequent Quarterly Reports on Form 10-Q, which are incorporated by reference in this prospectus, together with all of the other information appearing in this prospectus or incorporated by reference in this prospectus, in light of your particular investment objectives and financial circumstances. The risks and uncertainties we describe are not the only ones we face. If any of the events described actually occur, or if additional risks and uncertainties not presently known to us or that we currently deem immaterial, materialize, then our business, financial condition, cash flows, and operating results could be materially adversely affected. As a result, the trading price of our common stock and the value of the securities offered could decline, and you could lose a part or all of your investment.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. These forward-looking statements are largely based on our current expectations and projections about future events and financial trends affecting the financial condition of our business. Such forward-looking statements include, in particular, projections about our future results, statements about our plans, strategies, business prospects, changes and trends in our business and the markets in which we operate. These forward-looking statements may be identified by the use of terms and phrases such as “anticipates”, “believes”, “can”, “could”, “estimates”, “expects”, “forecasts”, “intends”, “may”, “plans”, “projects”, “targets”, “will”, and similar expressions or variations of these terms and similar phrases. Additionally, statements concerning future matters such as the development of new products, enhancements or technologies, sales levels, expense levels, and other statements regarding matters that are not historical are forward-looking statements. Management cautions that these forward-looking statements relate to future events or our future financial performance and are subject to business, economic, and other risks and uncertainties, both known and unknown, that may cause actual results, levels of activity, performance, or achievements of our business or our industry to be materially different from those expressed or implied by any forward-looking statements. Factors that could cause or contribute to such differences in results and outcomes include, but are not limited to, those discussed under the section entitled “Risk Factors” in this prospectus. Readers should carefully review this information as well as other risks and uncertainties described in other filings with the SEC that we may make after the filing date of this prospectus.

Neither management nor any other person assumes responsibility for the accuracy and completeness of any forward-looking statement. All forward-looking statements in this prospectus are made as of the date hereof, based on information available to us as of the date hereof, and subsequent facts or circumstances may contradict, obviate, undermine, or otherwise fail to support or substantiate such statements. We caution you not to rely on these statements without also considering the risks and uncertainties associated with these statements and our business that are addressed in this prospectus. We assume no obligation to update any forward-looking statement to conform such statements to actual results or to changes in our expectations, except as required by applicable law or regulation.

USE OF PROCEEDS

All proceeds from the sale of our common stock offered pursuant to this prospectus belong to the selling shareholder. We will not receive any proceeds from the sale of our common stock under this prospectus from the selling shareholder.

DESCRIPTION OF SECURITIES BEING REGISTERED

On April 26, 2011, we entered into a stock purchase agreement, which we refer to herein as the SDFIC Agreement, with Shanghai Di Feng Investment Co. Ltd., or SDFIC, pursuant to which we issued and sold an aggregate of 4,407,603 shares of our common stock to SDFIC for a purchase price of \$2.19 per share in a private placement transaction, which closed on May 31, 2011. We offered the shares of common stock to SDFIC in reliance on the exemption for transactions by an issuer not involving any public offering under Section 4(2) of, and Regulation D promulgated under, the Securities Act. In connection with the private placement offering, we entered into a registration rights agreement with SDFIC, which we refer to in this prospectus as the SDFIC Registration Rights Agreement, pursuant to which we agreed to register the shares issued to SDFIC in the private placement offering with the SEC on a Form S-1 within 60 days of the closing of the private placement offering, and to use our commercially reasonable efforts to have the registration statement declared effective within 120 days of the closing of the private placement offering. If the registration statement is not declared effective within the specified time period, or upon the occurrence of certain other events that would prevent SDFIC from selling the shares issued to it in the private placement offering, SDFIC will be entitled to receive liquidated damages, up to certain maximums and other limitations, in cash equal to 1.5% of the purchase price for each share that at such time remains subject to resale restrictions. We and SDFIC also each granted customary indemnification rights to the other in connection with the registration statement.

The foregoing description of the SDFIC Agreement and the SDFIC Registration Rights Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the SDFIC Agreement and the SDFIC Registration Rights Agreement, copies of which have been filed as exhibits to the registration statement of which this prospectus is a part.

SELLING SHAREHOLDER

This prospectus relates to the possible resale from time to time by the selling shareholder of any or all of the shares of common stock that have been issued as of the date hereof to SDFIC under the terms of the SDFIC Agreement. For additional information regarding the issuance of common stock covered by this prospectus, see “Description of Securities Being Registered” above. We are registering the shares of common stock pursuant to the provisions of the SDFIC Registration Rights Agreement in order to permit the selling shareholder to offer the shares for resale from time to time. Except for the transactions contemplated by the SDFIC Agreement and the SDFIC Registration Rights Agreement, SDFIC has not had any material relationship with us within the past three years.

The table below presents information regarding the selling shareholder and the shares of common stock that it may offer from time to time under this prospectus. This table is prepared based on information supplied to us by the selling shareholder, and reflects holdings as of July 20, 2011. As used in this prospectus, the term “selling shareholder” includes any donees, pledgees, transferees or other successors in interest selling shares received after the date of this prospectus from the selling shareholder as a gift, pledge or other non-sale related transfer. The number of shares in the column entitled “Maximum Number of Shares of Common Stock to be Offered Pursuant to this Prospectus” represents all of the shares of common stock that the selling shareholder may offer under this prospectus. The selling shareholder may sell some, all or none of its shares in this offering. We do not know how long the selling shareholder will hold the shares before selling them, and we currently have no agreements, arrangements or understandings with the selling shareholder regarding the sale of any of the shares.

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Beneficial ownership is determined in accordance with Rule 13d-3(d) promulgated by the SEC under the Exchange Act, and includes shares of common stock with respect to which the selling shareholder has voting and investment power. The percentage of shares of common stock beneficially owned by the selling shareholder prior to the offering shown in the table below is based on an aggregate of 92,966,451 shares of our common stock outstanding on July 20, 2011. The fourth column assumes the sale of all of the shares offered by the selling shareholder pursuant to this prospectus.

Selling Shareholder	Number of Shares of Common Stock Owned Prior to Offering		Maximum Number of Shares of Common Stock to be Offered Pursuant to this Prospectus ⁽²⁾	Number of Shares of Common Stock Owned After Offering
	Number	Percent ⁽¹⁾		
Shanghai Di Feng Investment Co. Ltd. ⁽³⁾	4,407,603	4.74%	4,407,603	---

⁽¹⁾ Applicable percentage ownership is based on 92,966,451 shares of our common stock outstanding as of July 20, 2011.

⁽²⁾ Assumes the sale of all shares being offered pursuant to this prospectus.

⁽³⁾ The business address of SDFIC is 2405 Securities Plaza, No. 528, Pudong South Road, Shanghai, China.

PLAN OF DISTRIBUTION

We are registering shares of common stock that have been issued as of the date hereof to SDFIC under the terms of the SDFIC Agreement to permit the resale of these shares of common stock by the selling shareholder from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling shareholder of the shares of common stock. We will bear all fees and expenses incident to our obligation to register the shares of common stock.

The selling shareholder may decide not to sell any shares of common stock. The selling shareholder may sell all or a portion of the shares of common stock beneficially owned by it and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions from the selling shareholder and/or the purchasers of the shares of common stock for whom they may act as agent. In effecting sales, broker-dealers that are engaged by the selling shareholder may arrange for other broker-dealers to participate. To our knowledge, the selling shareholder has not entered into any agreement, arrangement or understanding with any particular broker-dealer or market maker with respect to the shares of common stock offered hereby, nor do we know the identity of the broker-dealers or market makers that may participate in the resale of the shares.

The selling shareholder will act independently of us in making decisions with respect to the timing, manner and size of each sale. The shares of common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions, pursuant to one or more of the following methods:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market in accordance with the rules of the National Association of Securities Dealers, Inc.;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing or settlement of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- broker-dealers may agree with the selling shareholder to sell a specified number of such shares at a stipulated price per share;
- to cover short sales made after the date that the registration statement of which this prospectus is a part is declared effective by the SEC;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

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The selling shareholder may also sell shares of common stock covered by this prospectus pursuant to Rule 144 promulgated under the Securities Act, if available, rather than under this prospectus. In addition, the selling shareholder may transfer the shares of common stock by other means not described in this prospectus.

The selling shareholder may pledge its shares to its broker under the margin provisions of customer agreements. If the selling shareholder defaults on a margin loan, the broker may, from time to time, offer and sell the pledged shares.

Any broker-dealer participating in such transactions as agent may receive commissions from the selling shareholder (and, if they act as agent for the purchaser of such shares, from such purchaser). Broker-dealers may agree with the selling shareholder to sell a specified number of shares at a stipulated price per share, and, to the extent such a broker-dealer is unable to do so acting as agent for the selling shareholder, to purchase as principal any unsold shares at the price required to fulfill the broker-dealer commitment to the selling shareholder. Broker-dealers who acquire shares as principal may thereafter resell such shares from time to time in one or more transactions (which may involve crosses and block transactions and which may involve sales to and through other broker-dealers, including transactions of the nature described above and pursuant to the one or more of the methods described above) at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices, and in connection with such resales may pay to or receive from the purchasers of such shares commissions computed as described above. To the extent required under the Securities Act, an amendment to this prospectus or a supplemental prospectus will be filed, disclosing:

- the name of any such broker-dealers;
- the number of shares involved;
- the price at which such shares are to be sold;
- the commission paid or discounts or concessions allowed to such broker-dealers, where applicable;
- that such broker-dealers did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, as supplemented; and,
- other facts material to the transaction.

The selling shareholder has informed us that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the common stock. Pursuant to a requirement of the Financial Industry Regulatory Authority, or FINRA, the maximum commission or discount and other compensation to be received by any FINRA member or independent broker-dealer shall not be greater than eight percent (8%) of the gross proceeds received by us for the sale of any securities being registered pursuant to Rule 415 under the Securities Act.

Under the securities laws of some states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that the selling shareholder will sell any or all of the shares of common stock registered pursuant to the registration statement, of which this prospectus forms a part.

Underwriters and purchasers that are deemed underwriters under the Securities Act may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock, including the entry of stabilizing bids or syndicate covering transactions or the imposition of penalty bids. The selling shareholder and any other person participating in the sale or distribution of the shares of common stock will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder (including, without limitation, Regulation M of the Exchange Act), which may restrict certain activities of, and limit the timing of purchases and sales of any of the shares of common stock by, the selling shareholder and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the shares of common stock to engage in market-making and certain other activities with respect to the shares of common stock. In addition, the anti-manipulation rules under the Exchange Act may apply to sales of the shares of common stock in the market. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

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We have agreed to pay all expenses of the registration of the shares of common stock registered pursuant to the registration statement, of which this prospectus forms a part, estimated to be \$100,000 in total, including, without limitation, SEC filing fees and expenses of compliance with state securities or “Blue Sky” laws; provided, however, the selling shareholder will pay all selling commissions, concessions and discounts, and other amounts payable to underwriters, dealers or agents, if any, as well as transfer taxes and certain other expenses associated with the sale of the shares of common stock. We have agreed to indemnify the selling shareholder and certain other persons against certain liabilities in connection with the offering of shares of common stock offered hereby, including liabilities arising under the Securities Act or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. The selling shareholder has agreed to indemnify us against liabilities under the Securities Act that may arise from any written information furnished to us by the selling shareholder specifically for use in this prospectus or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities.

At any time a particular offer of the shares of common stock is made by the selling shareholder, a revised prospectus or prospectus supplement, if required, will be distributed. Such prospectus supplement or post-effective amendment will be filed with the SEC to reflect the disclosure of any required additional information with respect to the distribution of the shares of common stock. We may suspend the sale of shares by the selling shareholder pursuant to this prospectus for certain periods of time for certain reasons, including if the prospectus is required to be supplemented or amended to include additional material information.

DESCRIPTION OF OUR COMMON STOCK

General Matters

Our authorized capital stock consists of 200,000,000 shares of common stock, no par value, and 5,882,352 shares of preferred stock, \$0.0001 par value. As of July 20, 2011, we had 92,966,451 shares of common stock outstanding and no shares of preferred stock issued or outstanding.

Common Stock

Holders of common stock are entitled to one vote per share on matters to be voted upon by the shareholders of our company. Subject to the preferences that may be applicable to any outstanding shares of preferred stock, the holders of common stock are entitled to receive ratably such dividends, if any, as may be declared by the Board of Directors out of funds legally available therefor. In the event of liquidation, dissolution or winding up of our company, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities, subject to the prior liquidation rights of any outstanding shares of preferred stock. The common stock has no preemptive, redemption, conversion or other subscription rights. The outstanding shares of common stock are, and the shares offered by us in the offering will be, when issued and paid for, fully paid and nonassessable. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock currently outstanding or which we may designate and issue in the future.

Antitakeover Effects of Provisions of Our Restated Certificate of Incorporation and Amended Bylaws

Our Board of Directors is divided into three classes. As a result of this provision, at least two annual meetings of shareholders may be required for shareholders to change a majority of the Board of Directors. Our by-laws provide that the Board of Directors shall consist of not less than six nor more than twelve members, with the exact number to be determined by the vote of not less than 66 2/3 % of the Board of Directors from time to time. 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. Unless otherwise required by law, vacancies on the Board of Directors, including vacancies resulting from an increase in the number of directors or the removal of directors, may only be filled by an affirmative vote of 66 2/3% of the directors then in office. The classification of directors, the ability of the Board of Directors to increase the number of directors, the inability of the shareholders to remove directors without cause or fill vacancies on the Board of Directors and the inability of holders of less than 80% of our capital stock to remove directors even with cause will make it more difficult to change the Board of Directors, and will promote the continuity of existing management.

These and other provisions also may have the effect of deterring, preventing or delaying changes in control or management. These provisions are intended to enhance the likelihood of continued stability in the composition of the Board of Directors and in the policies furnished by the Board of Directors and to discourage types of transactions that may involve an actual or threatened change of control. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they also may inhibit fluctuations in the market price of our shares that could result from actual or rumored takeover attempts. These provisions also may have the effect of preventing changes in our management.

New Jersey Shareholders Protection Act

The New Jersey Shareholders Protection Act, NJSA 14A:10A-1 et seq., which we refer to as New Jersey Act, prohibits certain New Jersey corporations, such as us following this offering, from entering into certain “business combinations” with an “interested shareholder” (any person who is the beneficial owner of 10% or more of such corporation’s outstanding voting securities) for five years after such person became an interested shareholder, unless the business combination or the interested shareholder’s acquisition of stock was approved by the corporation’s Board of Directors prior to such interested shareholder’s stock acquisition date. After the five-year waiting period has elapsed, a business combination between such corporation and an interested shareholder will be prohibited unless the business combination is approved by the holders of at least two-thirds of the voting stock not beneficially owned by the interested shareholder, or unless the business combination satisfies the New Jersey Act’s fair price provision intended to provide that all shareholders (other than the interested shareholders) receive a fair price for their shares.

The New Jersey Act defines “business combination” to include the following transactions between a corporation or a subsidiary and an interested shareholder or such interested shareholder’s affiliates: (1) the merger or consolidation of the corporation with the interested shareholder or any corporation that after the merger or consolidation would be an affiliate or associate of the interested shareholder; (2) any sale, lease, exchange, mortgage, pledge, transfer or other disposition to or with the interested shareholder, which has an aggregate market value equal to 10% or more of the aggregate market value of all of the assets or of the outstanding stock, or 10% or more of the income of the corporation or its subsidiaries; (3) the issuance or transfer to the interested shareholder of any stock of the corporation having an aggregate market value equal to or greater than 5% of the corporation’s outstanding stock; (4) the adoption of a plan or proposal for the liquidation or dissolution of the corporation proposed by the interested shareholder; (5) any reclassification of securities proposed by the interested shareholder that has the effect, directly or indirectly, of increasing any class or series of stock that is owned by the interested shareholder; and (6) the receipt by the interested shareholder of any loans or other financial assistance from the corporation.

The New Jersey Act does not apply to certain business combinations, including those with persons who acquired 10% or more of the voting power of the corporation prior to the time the corporation was required to file periodic reports pursuant to the Exchange Act or prior to the time the corporation’s securities began to trade on a national securities exchange.

Transfer Agent and Registrar

The Transfer Agent and Registrar for our common stock is American Stock Transfer & Trust Company, New York, New York.

Listing

Our shares of common stock are quoted on The NASDAQ Global Market under the symbol “EMKR”.

LEGAL MATTERS

The validity of the securities being offered and registered hereby and certain other legal matters will be passed on by Stradling Yocca Carlson & Rauth, a Professional Corporation, Newport Beach, California.

EXPERTS

The consolidated financial statements of EMCORE Corporation as of September 30, 2010 and for the year ended September 30, 2010, and management's assessment of the effectiveness of internal control over financial reporting as of September 30, 2010 have been incorporated by reference herein in reliance upon the reports of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The audit report on the effectiveness of internal control over financial reporting as of September 30, 2010, expressed an opinion that EMCORE Corporation did not maintain effective internal control over financial reporting as of September 30, 2010 because of the effect of material weaknesses on the achievement of the objectives of the control criteria and contains an explanatory paragraph that states material weaknesses related to certain inventory reserves transactions and certain inventory held by third parties have been identified and included in management's assessment.

The consolidated financial statements as of September 30, 2009 and for the years ended September 30, 2009 and 2008 incorporated in this Prospectus by reference from the Company's Annual Report on Form 10-K for the year ended September 30, 2010, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which is incorporated herein by reference. Such financial statements have 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 ADDITIONAL INFORMATION

We have filed a registration statement on Form S-1 with the SEC relating to the securities offered by this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. We have omitted parts of the registration statement, as permitted by the rules and regulations of the SEC. Statements contained in this prospectus as to the contents of any contract or other document referred to are not necessarily complete and in each instance reference is made to the copy of such contract or other document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference. For further information with respect to us and the securities offered hereby, reference is made to such registration statement, exhibits and schedules.

We are subject to the information and periodic reporting requirements of the Exchange Act, and in accordance therewith file periodic reports, current reports, proxy statements and other information with the SEC. Such periodic reports, current reports, proxy statements, other information and a copy of the registration statement on Form S-1 may be inspected by anyone without charge and copies of these materials may be obtained upon the payment of the fees prescribed by the SEC, at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The registration statement on Form S-1 and the periodic reports, current reports, proxy statements and other information filed by us are also available to the public through the SEC's website at <http://www.sec.gov> and through our website at <http://www.emcore.com/investor>.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

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 you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus. We incorporate by reference the following information or documents that we have filed with the SEC:

- Our Annual Report on Form 10-K for the fiscal year ended September 30, 2010 filed with the SEC on January 10, 2011, as amended by Amendment No. 1 on Form 10-K/A filed with the SEC on January 28, 2011;
- Our Quarterly Reports on Form 10-Q filed with the SEC on February 7, 2011 and May 6, 2011;
- Our Definitive Proxy Statement on Schedule 14A filed with the SEC on May 5, 2011; and
- All other reports we have filed with the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act since the end of the fiscal year covered by the Annual Report on Form 10-K described above.

Any statement contained in any document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any prospectus supplement modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, a copy of any or all documents that are incorporated by reference into this prospectus, but not delivered with the prospectus, other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates. You should direct written requests to: EMCORE Corporation, 10420 Research Road, SE, Albuquerque, New Mexico 87123, Attention: Investor Relations, (505) 332-5000.



Prospectus

PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution**

The following table sets forth all costs and expenses, other than underwriting discounts and commissions, to be paid in connection with the sale of the securities being registered hereunder, all of which will be paid by us. All of the amounts shown are estimates except for the SEC registration fee.

SEC registration fee	\$ 1,443.06
Legal fees and expenses	\$ 50,000.00
Accounting fees and expenses	\$ 30,000.00
Miscellaneous expenses	\$ 18,556.94
Total	\$ 100,000.00

Item 14. Indemnification of Directors and Officers

Our restated certificate of incorporation and amended bylaws include provisions (i) reducing the personal liability of our directors for monetary damage resulting from breaches of their fiduciary duty, and (ii) permitting us to indemnify our directors and officers to the fullest extent permitted by New Jersey law. We have obtained directors' and officers' liability insurance that insures such persons against the costs of defense, settlement, or payment of a judgment under certain circumstances.

Subject to certain limitations, we are obligated to indemnify our current and former directors, officers and employees in connection with the investigation of our historical stock option granting practices, related government investigation and shareholder litigation. These obligations arise under the terms of our restated certificate of incorporation, our amended bylaws, applicable contracts and New Jersey law. The obligation to indemnify generally means that we are required to pay or reimburse the individuals' reasonable legal expenses and possibly damages and other liabilities incurred in connection with these matters. We are currently paying or reimbursing legal expenses being incurred in connection with these matters by a number of our current and former directors, officers and employees. The maximum potential amount of future payments we could be required to make under these indemnification agreements is unlimited; however, we have a director and officer liability insurance policy that limits its exposure and enables it to recover a portion of any future amounts paid.

Item 15. Recent Sales of Unregistered Securities

On May 31, 2011, we issued 4,407,603 shares of our common stock to SDFIC pursuant to the terms of the SDFIC Agreement. The issuance of such shares was exempt from registration under the Securities Act of 1933, as amended, or the Securities Act, pursuant to the exemption for transactions by an issuer not involving any public offering under Section 4(2) of, and Regulation D promulgated under, the Securities Act.

Item 16. Exhibits and Financial Statement Schedules**(a) Exhibits**

- | | |
|-----|--|
| 2.1 | Stock Purchase Agreement, dated as of April 13, 2007, by and among the Company, Opticomm Corporation, and the persons named on Exhibit 1 thereto (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on April 19, 2007). |
| 2.2 | Asset Purchase Agreement, dated December 17, 2007, between the Company and Intel Corporation (incorporated by reference to Exhibit 2.1 to the Company's Quarterly Report on Form 10-Q filed on February 11, 2008) |

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2.3	Securities Purchase Agreement, dated February 15, 2008, between the Company and each investor identified on the signature pages thereto (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 20, 2008).
2.4	Registration Rights Agreement, dated February 15, 2008, between the Company and the investors identified on the signature pages thereto (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on February 20, 2008).
2.5	Warrant to Purchase Common Stock, dated February 19, 2008, between the Company and the investors identified on the signature pages thereto (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on February 20, 2008).
2.6	Asset Purchase Agreement, dated April 9, 2008, between the Company and Intel Corporation (incorporated by reference to Exhibit 2.1 to the Company's Quarterly Report on Form 10-Q filed on May 12, 2008)
2.7	Common Stock Purchase Agreement, dated October 1, 2009, between the Company and Commerce Court Small Cap Value Fund, Ltd. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on October 2, 2009).
2.8	Warrant to Purchase Common Stock, dated October 1, 2009, between the Company and Commerce Court Small Cap Value Fund, Ltd. (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on October 2, 2009).
2.9	Amendment to Common Stock Purchase Agreement, dated November 24, 2009, between the Company and Commerce Court Small Cap Value Fund, Ltd. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 25, 2009).
3.1	Restated Certificate of Incorporation, dated April 4, 2008 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on April 4, 2008).
3.2	Amended By-Laws, as amended through August 7, 2008 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on August 13, 2008).
4.1	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 filed on February 24, 1997).
4.2	Registration Rights Agreement dated April 26, 2011 by and between the Company and Shanghai Di Feng Investment Co. Ltd. (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on April 26, 2011).
5.1**	Opinion of Stradling Yocca Carlson & Rauth, a Professional Corporation.
10.1†	1995 Incentive and Non-Statutory Stock Option Plan (incorporated by reference to Exhibit 10.1 to the Amendment No. 1 to the registration statement on Form S-1 filed on February 6, 1997).
10.2†	1996 Amendment to Option Plan (incorporated by reference to Exhibit 10.2 to Amendment No. 1 to the registration statement on Form S-1 filed on February 6, 1997).
10.3†	MicroOptical Devices, Inc. 1996 Stock Option Plan (incorporated by reference to Exhibit 99.1 to the registration statement on Form S-8 filed on February 6, 1998).
10.4†	Outside Directors Cash Compensation Plan, effective October 20, 2005, as amended and restated (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on February 17, 2006).

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10.5	Exchange Agreement, dated as of November 10, 2005, by and between Alexandra Global Master Fund Ltd. and the Company (incorporated by reference to Exhibit 10.15 to the Company's Annual Report on Form 10-K filed on December 14, 2005).
10.6	Investment Agreement, dated November 29, 2006, between WorldWater and Power Corporation and the Company (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 5, 2006).
10.7	Registration Rights Agreement, dated November 29, 2006, between WorldWater and Power Corporation and the Company (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on December 5, 2006).
10.8	Letter Agreement, dated November 29, 2006, between WorldWater and Power Corporation and the Company (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on December 5, 2006). Confidential treatment has been requested by the Company with respect to portions of this document. Such portions are indicated by "*****".
10.9†	Dr. Hong Hou Offer Letter, dated December 14, 2006 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 20, 2006).
10.10	Consents to Amendment and Waiver, dated as of April 9, 2007, by and among the Company and certain holders of the Company's convertible subordinated notes thereto (incorporated by reference to Exhibit 10.1 and 10.2 to the Company's Current Report on Form 8-K filed on April 10, 2007).
10.11†	Executive Severance Policy, effective May 1, 2007 (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on April 19, 2007).
10.12	Memorandum of Understanding, dated as of September 26, 2007, between Lewis Edelstein and the Company regarding shareholder derivative litigation (incorporated by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K filed on November 1, 2007).
10.13	Stipulation of Compromise and Settlement, dated as of November 28, 2007, executed by the Company and the other defendants and the plaintiffs in the Federal Court Action and the State Court Actions (incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K filed on December 31, 2007).
10.14†	2007 Directors' Stock Award Plan (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on February 11, 2008).
10.15†	Fiscal 2008 Executive Bonus Plan, adopted March 31, 2008 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on May 12, 2008).
10.16†	Mr. John M. Markovich Offer Letter, dated August 7, 2008 (incorporated by reference to Exhibit 10.20 to the Company's Annual Report on Form 10-K filed December 30, 2008).
10.17	Loan and Security Agreement, dated as of September 29, 2008, between Bank of America, N.A. and the Company (incorporated by reference to Exhibit 2.5 to the Company's Annual Report on Form 10-K filed December 30, 2008).
10.18	First Amendment to Loan and Security Agreement, dated February 16, 2009, between Bank of America, N.A. and the Company (incorporated by reference to Exhibit 10.21 to the Company's Quarterly Report on Form 10-Q filed on February 17, 2009).
10.19	Third Amendment to Loan and Security Agreement, dated April 30, 2009, between Bank of America, N.A. and the Company (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on May 6, 2009).

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10.20	Fourth Amendment to Loan and Security Agreement, dated May 8, 2009, between Bank of America, N.A. and the Company (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on August 17, 2009).
10.21	Fifth Amendment to Loan and Security Agreement, dated November 30, 2009, between Bank of America, N.A. and the Company (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 3, 2009).
10.22	Sixth Amendment to Loan and Security Agreement, dated February 8, 2010, between Bank of America, N.A. and the Company (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on February 9, 2010).
10.23	Seventh Amendment to Loan and Security Agreement, dated May 6, 2010, between Bank of America, N.A. and the Company (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on May 10, 2010).
10.24	Eighth Amendment to Loan and Security Agreement, dated August 11, 2010, between Bank of America, N.A. and the Company (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on August 17, 2010).
10.25†	EMCORE Corporation 2000 Stock Option Plan, as amended and restated on April 30, 2009 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 6, 2009).
10.26†	EMCORE Corporation 2000 Employee Stock Purchase Plan, as amended June 14, 2011 (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on June 16, 2011).
10.27†	Directors' Stock Award Plan (incorporated herein by reference to Exhibit 99.1 to the Company's registration statement of Form S-8 filed on November 5, 1997, as amended and incorporated herein by reference to Exhibit 99.1 by the registration statement on Form S-8 filed on June 5, 2009).
10.28	Share Purchase Agreement, dated February 3, 2010, by and among Tangshan Caoheidian Investment Corporation, Ltd. and the Company (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on February 9, 2010).
10.29	Shareholders Agreement, dated February 3, 2010, by and among Tangshan Caoheidian Investment Corporation, Ltd. and the Company (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on February 9, 2010).
10.30	Supplemental Agreement, dated February 3, 2010, by and among Tangshan Caoheidian Investment Corporation, Ltd. and the Company (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on February 9, 2010).
10.31	Credit and Security Agreement, dated November 11, 2010, between Wells Fargo Bank National Association and the Company (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed November 17, 2010).
10.32	Joint Venture Contract, dated July 30, 2010, by and between San'An Optoelectronics, Co., Ltd. and the Company (incorporated by reference to Exhibit 10.32 to the Company's Annual Report on Form 10-K filed on January 10, 2011).
10.33	Cooperation Agreement, dated July 30, 2010, by and between Fujian San'An Group Corporation and the Company (incorporated by reference to Exhibit 10.33 to the Company's Annual Report on Form 10-K filed on January 10, 2011).
10.34	Mr. Mark Weinswig Offer Letter, dated September 10, 2010 (incorporated by reference to Exhibit 10.34 to the Company's Annual Report on Form 10-K filed on January 10, 2011).

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10.35	Investment Cooperation Agreement on the Project of Terrestrial Application of High Concentration Photovoltaic Systems and Components, dated December 4, 2010, by and among Huainan Municipal Government, San'an Optoelectronics Co., Ltd., and the Company (incorporated by reference to Exhibit 10.35 to the Company's Annual Report on Form 10-K filed on January 10, 2011).
10.36	Officer and Director Share Purchase Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 27, 2011)
10.37	Stock Purchase Agreement dated April 26, 2011 by and between the Company and Shanghai Di Feng Investment Co. Ltd. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 26, 2011).
10.38	2010 Equity Incentive Plan, as amended and restated on June 14, 2011 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 16, 2011).
<u>23.1**</u>	Consent of KPMG LLP.
<u>23.2**</u>	Consent of Deloitte & Touche LLP.
23.3**	Consent of Stradling Yocca Carlson & Rauth (included in Exhibit 5.1)
24**	Power of Attorney (included as part of the signature page of this registration statement on Form S-1).

** *Filed herewith*

† *Management contract or compensatory plan*

(b) ***Financial Statement Schedules***

All schedules have been omitted because the information required to be presented in them is not applicable or is shown in the consolidated financial statements or related notes.

Item 17. Undertakings.

(a) 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:

(i) to include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) 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 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) 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.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment 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.

(b) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 Act and will be governed by the final adjudication of such issue.

(c) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, 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.

(2) For the purpose of determining any liability under the Securities Act of 1933, 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.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Albuquerque, State of New Mexico, on the 25th day of July 2011.

EMCORE CORPORATION

By: /s/ Hong Q. Hou, Ph.D.
Chief Executive Officer
(Principal Executive Officer)

POWER OF ATTORNEY

We, the undersigned directors and officers of EMCORE Corporation, do hereby constitute and appoint Hong Q. Hou, Ph.D. our true and lawful attorney and agent, to do any and all acts and things in our name and behalf in our capacities as directors and officers and to execute any and all instruments for us and in our names in the capacities indicated below, which said attorney and agent may deem necessary or advisable to enable said corporation to comply with the Securities Act of 1933, as amended, and any rules, regulations, and requirements of the Securities and Exchange Commission, in connection with this registration statement, including specifically, but without limitation, power and authority to sign for us or any of us in our names and in the capacities indicated below, any and all amendments (including post-effective amendments) to this registration statement, or any related registration statement that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended; and we do hereby ratify and confirm all that the said attorney and agent shall do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Hong Q. Hou, Ph.D.</u> Hong Q. Hou, Ph.D.	Chief Executive Officer and Director (Principal Executive Officer)	July 25, 2011
<u>/s/ Mark B. Weinswig</u> Mark B. Weinswig	Chief Financial Officer (Principal Financial and Accounting Officer)	July 25, 2011
<u>/s/ Thomas J. Russell, Ph.D.</u> Thomas J. Russell, Ph.D.	Chairman Emeritus	July 25, 2011
<u>/s/ Reuben F. Richards, Jr.</u> Reuben F. Richards, Jr.	Executive Chairman and Chairman of the Board	July 25, 2011
<u>/s/ Robert L. Bogomolny</u> Robert L. Bogomolny.	Lead Independent Director	July 25, 2011
<u>/s/ John Gillen</u> John Gillen	Director	July 25, 2011
<u>/s/ Sherman McCorkle</u> Sherman McCorkle	Director	July 25, 2011
<u>/s/ Charles T. Scott</u> Charles T. Scott	Director	July 25, 2011

Stradling Yocca Carlson & Rauth
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
660 NEWPORT CENTER DRIVE, SUITE 1600
NEWPORT BEACH, CA 92660-6422
TELEPHONE (949) 725-4000
FACSIMILE (949) 725-4100

ORANGE COUNTY
(949) 725-4000
SAN DIEGO
(858) 926-3000
SAN FRANCISCO
(415) 283-2240
SANTA BARBARA
(805) 730-6800
SACRAMENTO
(916) 449-2350

Exhibit 5.1

July 25, 2011

EMCORE Corporation
10420 Research Road, SE
Albuquerque, New Mexico 87123

Re: *EMCORE Corporation Registration Statement on Form S-1*

Ladies and Gentlemen:

At your request, we have examined the form of Registration Statement on Form S-1 (the "Registration Statement") being filed by EMCORE Corporation, a New Jersey corporation (the "Company"), with the Securities and Exchange Commission in connection with the registration under the Securities Act of 1933, as amended, of an aggregate of 4,407,603 shares (the "Shares") of the Company's common stock, no par value per share, issued pursuant to a Stock Purchase Agreement, dated April 26, 2011, between the Company and the selling shareholder as named in the Registration Statement. The Shares may be offered for resale from time to time by and for the account of the selling shareholder as named in the Registration Statement.

We have reviewed the corporate actions of the Company in connection with this matter and have examined such documents, corporate records and other instruments as we have deemed necessary for the purposes of this opinion.

Based on the foregoing, it is our opinion that the Shares have been duly authorized and validly issued, and are fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Registration Statement and to the use of our name under the caption "Legal Matters" in the Registration Statement, including any amendment thereto.

Very truly yours,

STRADLING YOCCA CARLSON & RAUTH

/s/ Stradling Yocca Carlson & Rauth

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors
EMCORE Corporation:

We consent to the use of our reports with respect to the consolidated financial statements and the effectiveness of internal control over financial reporting incorporated by reference herein and to the reference to our firm under the heading "Experts" in the prospectus.

Our report dated January 10, 2011, on the effectiveness of internal control over financial reporting as of September 30, 2010, expresses our opinion that EMCORE Corporation did not maintain effective internal control over financial reporting as of September 30, 2010 because of the effect of material weaknesses on the achievement of the objectives of the control criteria and contains an explanatory paragraph that states material weaknesses related to certain inventory reserve transactions and certain inventory held by third parties have been identified and included in management's assessment.

/s/ KPMG LLP

KPMG LLP

Albuquerque, New Mexico

July 25, 2011

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-1 of our report dated December 29, 2009 (January 10, 2011 as to the effects of correcting the 2009 financial statements described in Note 2) relating to the consolidated financial statements as of September 30, 2009 and for the years ended September 30, 2009 and 2008 of EMCORE Corporation included in the annual report on Form 10-K of EMCORE Corporation for the year ended September 30, 2010, and to the reference to us under the heading "Experts" in the Prospectus, which is part of such Registration Statement.

/s/ DELOITTE & TOUCHE LLP

Deloitte & Touche LLP

Dallas, Texas

July 25, 2011
