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ELECTRIC FUEL CORP
Form S-3/A
April 16, 2003

AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON APRIL 16, 2003
Registration No. 333- 99673

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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

AMENDMENT NO. 5

TO
FORM S-3
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ELECTRIC FUEL CORPORATION
(Exact name of Registrant as specified in its charter)

DELAWARE
(State or other jurisdiction of incorporation or
organization)

ELECTRIC FUEL CORPORATION
632 BROADWAY
NEW YORK, NEW YORK 10012
TEL: (646) 654-2107 FAX: (646) 654-2187
(Address, including ZIP code, and telephone number,
including
area code, of Registrant's principal executive
offices)

95-4302784
(I.R.S. Employer Identification No.)

MICHELLE BERKLEY
ELECTRIC FUEL CORPORATION
632 BROADWAY
NEW YORK, NEW YORK 10012
TEL: (646) 654-2107 FAX: (646) 654-2187
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number,
including area code, of agent for service)

COPIES OF ALL COMMUNICATIONS, INCLUDING COMMUNICATIONS SENT TO THE AGENT FOR SERVICE, TO:

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AND

YAAKOV HAR-OZ, ADV.
VICE PRESIDENT AND GENERAL COUNSEL
ELECTRIC FUEL LIMITED
WESTERN INDUSTRIAL ZONE
BEIT SHEMESH 99000, ISRAEL
TEL: +(972-2) 990-6623 FAX: +(972-2) 990-6623

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC: From time to
time after this Registration Statement becomes effective.

If the only securities being registered on this Form are to be 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

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1933, please 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, 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 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 delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. []

CALCULATION OF REGISTRATION FEE			
Title of each class of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per unit(2)	Proposed aggregate offering price(3)
Common Stock, par value \$0.01 per share(3)	3,250,000	\$1.29	\$ 4,192,500
Common Stock, par value \$0.01 per share(4)	387,301	\$0.55	\$ 213,016
Common Stock, par value \$0.01 per share(5)	5,468,750	\$0.64	\$ 3,500,000
Common Stock, par value \$0.01 per share(6)	1,166,700	\$0.64	\$ 746,688
Common Stock, par value \$0.01 per share(6)	1,166,700	\$0.64	\$ 746,688
Common Stock, par value \$0.01 per share(6)	1,166,700	\$0.64	\$ 746,688
TOTAL:	12,606,151		\$ 10,135,570

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended, the number of shares of common stock registered hereby shall include an indeterminate number of shares of common stock that may be issued in connection with a stock split, stock dividend, recapitalization or similar event.
- (2) In accordance with Rule 457(c), the aggregate offering price of shares of our common stock is estimated solely for purposes of calculating the registration fee payable pursuant hereto, using the average of the high and low sales price reported by The Nasdaq National Market System for our common stock on March 3, 2003, which was \$0.55 per share and, with respect to shares of our common stock issuable upon exercise of outstanding debentures and warrants, the higher of (i) such average sales price or (ii) the conversion or exercise price of such debentures and warrants, respectively.
- (3) Represents shares of our common stock that are currently outstanding and being offered for resale by certain of our stockholders.
- (4) Represents shares of our common stock that were issued by us in pre-payment of interest on our outstanding debentures between January 1, 2003 and September 30, 2003, and that are presently outstanding and owned by certain of our stockholders.

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- (5) Represents shares of our common stock issuable upon conversion of outstanding debentures, which may be converted at a conversion price of \$0.64 per share.
- (6) Represents shares of our common stock issuable upon exercise of outstanding warrants, exercisable at any time until December 31, 2007 at an exercise price of \$0.64 per share.
- (7) Registration fees in the aggregate amount of \$937.15 have previously been paid in respect of this registration statement, and hence no additional fees are due in connection with this filing .

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.

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THE INFORMATION IN THIS PRELIMINARY PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THE SELLING STOCKHOLDERS 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 THESE SECURITIES AND IS NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

Subject to completion, preliminary prospectus dated April 16, 2003

Electric Fuel(R)
Corporation

doing business as

AROTECH
Corporation

12,606,151 Shares
Common Stock

This prospectus relates to the offer and sale of up to 12,606,151 shares of the common stock of Electric Fuel Corporation, doing business as Arotech Corporation, from time to time by certain of our stockholders listed in this prospectus.

The selling stockholders may offer their shares in public transactions on the Nasdaq National Market at prevailing market prices or in negotiated private transactions at negotiated prices. Our common stock is listed on the Nasdaq National Market under the ticker symbol "ARTX." The last reported sale price for

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our common stock on April 14, 2003 as quoted on the Nasdaq National Market was \$0.74 per share.

On December 6, 2002, Nasdaq notified us of our failure to meet its continued listing standards, and informed us that unless our stock closes for ten consecutive trading days with a bid price in excess of \$1.00 prior to March 6, 2003, Nasdaq would notify us of its intent to delist our stock from the Nasdaq National Market. This date was subsequently extended, as a result of an amendment to Nasdaq's listing regulations, to June 4, 2003. See "Risk Factors - Market-Related Risks - If our shares were to be delisted, our stock price might decline further and we might be unable to raise additional capital," on page 12.

Investing in our common stock involves a high degree of risk. See "Risk Factors" on page 6 for various risks that you should consider before you purchase any shares of our common stock.

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 _____, 2003

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Unless the context otherwise requires, references to us - Electric Fuel or Arotech - refer to Electric Fuel Corporation (doing business as Arotech Corporation) and our subsidiaries.

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Summary

The following summary highlights some information from this prospectus. It is not complete and does not contain all of the information that you should consider before making an investment decision. You should read this entire prospectus, including the "Risk Factors" section, the financial statements and related notes and the other more detailed information appearing elsewhere or incorporated by reference in this prospectus. Unless otherwise indicated, "we," "us," "our" and similar terms refer to Electric Fuel Corporation, which is doing

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business as Arotech Corporation, and its subsidiaries and not to the selling stockholders.

Electric Fuel(R) is a registered trademark that belongs to us. All company and product names mentioned may be trademarks or registered trademarks of their respective holders.

About Us

We are a world leader in primary and refuelable Zinc-Air fuel cell technology, engaging directly and through our subsidiaries in the use of Zinc-Air battery technology for defense and security products and other military applications and for electric vehicles, in car armoring, and in interactive multimedia use-of-force simulators. We have been doing business since February 2003 under the name "Arotech Corporation." We operate in two business units:

- o we develop, manufacture and market defense and security products, including advanced hi-tech multimedia and interactive digital solutions for training of military, law enforcement and security personnel and sophisticated lightweight materials and advanced engineering processes to armor vehicles; and
- o we pioneer advancements in Zinc-Air battery technology for defense and security products and other military applications and for electric vehicles.

Recent Developments

Sale of Debentures

In December 2002, we issued and sold to three institutional investors (i) an aggregate of \$3,500,000 principal amount of 9% Secured Convertible Debentures due June 30, 2005; and (ii) Warrants to purchase an aggregate of 3,500,100 shares of our common stock. In April 2003, we repriced the conversion price of the debentures and the exercise price of the warrants in lieu of the payment of liquidated damages for failing to register the shares of common stock underlying the debentures and the warrants by March 31, 2003. As a result of the repricing, the debentures are convertible at the option of the holders into an aggregate of 5,468,750 shares of our common stock at a conversion price of \$0.64 per share, and the warrants are exercisable at an exercise price of \$0.64 per share and may be exercised at any time prior to December 31, 2007. In addition, we have issued an aggregate of 387,301 shares of common stock in prepayment of the first nine months of interest on the debentures.

Under the terms of our agreement with the purchasers of our debentures, we granted the purchasers a security interest in the assets connected with our U.S. operations, including our IES subsidiary, as well as in our stock of IES and our other subsidiaries. We also committed ourselves to certain customary affirmative and negative covenants, including obligations on our part to preserve and maintain our assets and restrictions on our ability to incur or guarantee debt, to merge with or sell our assets to another company, and to make significant capital expenditures without the consent of the debenture holders. The foregoing description of our agreement with our debenture holders is qualified in its entirety by reference to the agreements with our debenture holders filed as exhibits to our Current Reports on Form 8-K that we filed with the SEC on January 6, 2003 and on April 4, 2003.

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The shares of our common stock underlying the debentures and the warrants are being registered for resale under this prospectus pursuant to registration rights that were granted in connection with the above transaction.

German Police Order

In January 2003, our subsidiary IES Interactive Training, Inc. was awarded a \$2.6 million contract to supply simulation training systems to the largest regional police division in Germany. The contract calls for delivery of several separate interactive training systems, with delivery dates ranging from April to September 2003 and payment dates due following delivery, testing and ascertainment of appropriate run capability of each system.

Defense and Security Products

Interactive Use-of-Force Training

Through our wholly-owned IES subsidiary, we provide specialized "use of force" training for police, homeland security personnel and the military. We offer products and services that allow organizations to train their personnel in safe, productive, and realistic environments. We believe that our training systems offer more functionality, greater flexibility, unprecedented realism and a wider variety of user interface options than competing products. Our systems are sold to corporations, government agencies, military and law enforcement professionals around the world. The simulators are currently used by some of the worlds leading training academies, including (in the United States) the Secret Service, the Bureau of Alcohol, Tobacco and Firearms, the Houston Police Department, the Customs Service, the Border Patrol, the Bureau of Engraving and Printing, the Coast Guard, the Federal Law Enforcement Training Centers, the California Department of Corrections, the Detroit Police Department, the Washington DC Metro Police and international users such as the Israeli Defense Forces, the German National Police, the Royal Thailand Army, the Hong Kong Police, the Russian Security Police, and over 400 other training departments worldwide.

Our interactive training systems range from the powerful Range 3000 use-of-force simulator system to the multi-faceted A2Z Classroom Training system. The Range 3000 line of simulators addresses the entire use of force training continuum in law enforcement, allowing the trainee to use posture, verbalization, soft hand skills, impact weapons, chemical spray, low-light electronic weapons and lethal force in a scenario based classroom environment. The A2Z Classroom Trainer provides the trainer with real time electronic feedback from every student through wireless handheld keypads. The combination of interactivity and instant response assures that learning takes place in less time with higher retention.

Vehicle Armoring

Through our majority-owned MDT Protective Industries subsidiary, we specialize in using state-of-the-art lightweight ceramic materials, special ballistic glass and advanced engineering processes to fully armor vans and cars. MDT is a leading supplier to the Israeli military, Israeli special forces and special services. MDT's products are proven in intensive battlefield situations and under actual terrorist attack conditions, and are designed to meet the demanding requirements of governmental and private sector customers worldwide.

Electric Fuel Batteries

Zinc-Air Fuel Cells and Batteries

We believe that our Zinc-Air batteries provides the highest energy and power density combination available today in the defense market, making them

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particularly appropriate where long missions are required and low weight is important.

Our line of existing battery products for the military and defense sectors includes Advanced Zinc-Air Power Packs (AZAPPs) utilizing our most advanced cells (which have specific energy of 400 watt-hours per kilogram), a line of super-lightweight AZAPPs that feature the same 400 Wh/kg cell technology in smaller cells, and our new, high-power Zinc-Air Power Packs (ZAPPs), which offer extended-use portable power using our commercial Zinc-Air cell technology. Our AZAPPs have received a National Stock Number (a Department of Defense catalog number assigned to products authorized for use by the U.S. military), making our AZAPPs available for purchase by all units of the U.S. Armed Forces.

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We are continuing to expand the development of other advanced uses of our battery technology for applications that demand high energy and light weight. We also produce water-activated lifejacket lights for commercial aviation and marine applications, and will pursue further development of the safety products business.

Electric Vehicle

Our Electric Vehicle effort, conducted through our subsidiary Electric Fuel Transportation Corp., continues to focus on obtaining and implementing demonstration projects in the U.S. and Europe, and on building broad industry partnerships that can lead to eventual commercialization of the Zinc-Air energy system. This approach supports our long-term strategy of achieving widespread implementation of the Electric Fuel Zinc-Air energy system for electric vehicles in large commercial and mass transit vehicle fleets. Our all-electric bus, powered by our Zinc-Air fuel cell technology, has demonstrated a world-record 127-mile range under rigorous urban conditions, and we have successfully demonstrated our vehicle in "on-the-road" programs in Germany, Sweden, Italy, Israel and the United States, most recently in public tests in Las Vegas, Nevada, in November 2001, and in Washington, D.C., on Capitol Hill, with the participation of certain members of the United States Senate, in March 2002. We intend to strengthen existing relationships and to develop new networks of strategic alliances with fleet operators, companies engaged in energy production and transportation, automobile manufacturers and others in order to establish the infrastructure necessary for further development and commercialization of the Electric Fuel Zinc-Air system.

Facilities

We were incorporated in Delaware in 1990 and began doing business under the name "Arotech Corporation" in February 2003. We anticipate changing our corporate name from "Electric Fuel Corporation" to "Arotech Corporation" at our next annual shareholders' meeting later in 2003. Our principal executive offices are located at 632 Broadway, New York, New York 10012, and our telephone number is (646) 654-2107. Our Internet address is www.arotech.com. Our periodic reports to the Securities Exchange Commission, as well as recent filings relating to transactions in our securities by our executive officers and directors, that have been filed with the Securities and Exchange Commission in EDGAR format are available through hyperlinks located on the investor relations page of our website, at www.arotech.com/compro/investor.html. Information on our website does not constitute part of this prospectus.

The offices and facilities of our two of our principal subsidiaries, Electric Fuel Limited (EFL) and MDT, are located in Israel (in Beit Shemesh and Lod, respectively, both of which are within Israel's pre-1967 borders). We

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conduct research and development activities through EFL, and most of our senior management is located at EFL's facilities. We also conduct development and production activities at IES's offices in Littleton, Colorado, and at our new production facility in Auburn, Alabama, which builds and tests advanced batteries for the defense market.

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RISK FACTORS

An investment in our common stock involves a high degree of risk. You should carefully consider the following risk factors and other information in this prospectus in addition to our financial statements before investing in our common stock. In addition to the following risks, there may also be risks that we do not yet know of or that we currently think are immaterial that may also impair our business operations. The trading price of our common stock could decline due to any of these risks, and you may lose all or part of your investment.

Business-Related Risks

We have had a history of losses and may incur future losses.

We were incorporated in 1990 and began our operations in 1991. We have funded our operations principally from funds raised in each of the initial public offering of our common stock in February 1994; through subsequent public and private offerings of our common stock and equity and debt securities convertible into shares of our common stock; research contracts and supply contracts; funds received under research and development grants from the Government of Israel; and sales of products that we and our subsidiaries manufacture. We have incurred significant operating losses since our inception. Additionally, as of December 31, 2002, we had an accumulated deficit of approximately \$100.7 million. There can be no assurance that we will ever achieve profitability or that our business will continue to exist. Additionally, because we do not presently meet the transaction requirements for filing registration statements for primary offerings of our securities on the simpler Form S-3 registration statement, raising capital through sales of our securities may be more difficult in the future than it has been in the past.

Our existing indebtedness may adversely affect our ability to obtain additional funds and may increase our vulnerability to economic or business downturns.

Our indebtedness, including the aggregate principal amount of the debentures sold by us in December 2002, aggregated approximately \$5.3 million as of December 31, 2002. Accordingly, we are subject to the risks associated with indebtedness, including:

- o we must dedicate a portion of our cash flows from operations to pay debt service costs and, as a result, we have less funds available for operations, future acquisitions of consumer receivable portfolios, and other purposes;
- o it may be more difficult and expensive to obtain additional funds through financings, if available at all;
- o we are more vulnerable to economic downturns and fluctuations in interest rates, less able to withstand competitive pressures and less

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flexible in reacting to changes in our industry and general economic conditions; and

- o if we default under any of our existing debt instruments or if our creditors demand payment of a portion or all of our indebtedness, we may not have sufficient funds to make such payments.

The occurrence of any of these events could materially adversely affect our results of operations and financial condition and adversely affect our stock price.

The agreements governing the terms of our debentures contain numerous affirmative and negative covenants that limit the discretion of our management with respect to certain business matters and place restrictions on us, including obligations on our part to preserve and maintain our assets and restrictions on our ability to incur or guarantee debt, to merge with or sell our assets to another company, and to make significant capital expenditures without the consent of the debenture holders. Our ability to comply with these and other provisions of such agreements may be affected by changes in economic or business conditions or other events beyond our control.

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Failure to comply with the terms of our debentures could result in a default that could have material adverse consequences for us.

A failure to comply with the obligations contained in our debenture agreements, including a failure to have our registration statement registering the shares underlying our debentures and the warrants issued as part of the debenture financing declared effective by the SEC on or before January 1, 2004, could result in an event of default under such agreements which could result in an acceleration of the debentures and the acceleration of debt under other instruments evidencing indebtedness that may contain cross-acceleration or cross-default provisions. If the indebtedness under the debentures or other indebtedness were to be accelerated, there can be no assurance that our assets would be sufficient to repay in full such indebtedness. The foregoing description of our agreement with our debenture holders is qualified in its entirety by reference to the agreements with our debenture holders filed as exhibits to our Current Reports on Form 8-K that we filed with the SEC on January 6, 2003 and on April 4, 2003.

We have pledged a substantial portion of our assets to secure our borrowings.

The debentures are secured by a substantial portion of our assets. If we default under the indebtedness secured by our assets, those assets would be available to the secured creditor to satisfy our obligations to the secured creditor, which could materially adversely affect our results of operations and financial condition and adversely affect our stock price.

We need significant amounts of capital to operate and grow our business.

We require substantial funds to conduct the necessary research, development and testing of our products; to establish commercial scale manufacturing facilities; and to market our products. We continue to seek additional funding, including through the issuance of equity or debt securities. However, there can be no assurance that we will obtain any such additional financing in a timely manner or on acceptable terms. If additional funds are raised by issuing equity securities, stockholders may incur further dilution. If additional funding is

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not secured, we will have to modify, reduce, defer or eliminate parts of our anticipated future commitments and/or programs.

We may not be successful in operating a new business.

Prior to the IES and MDT acquisitions, our primary business was the marketing and sale of products based on primary and refuelable Zinc-Air fuel cell technology and advancements in battery technology for defense and security products and other military applications, electric vehicles and consumer electronics. As a result of the IES and MDT acquisitions, a substantial component of our business will be the marketing and sale of hi-tech multimedia and interactive digital solutions for training military, law enforcement and security personnel and sophisticated lightweight materials and advanced engineering processes used to armor vehicles. These are new businesses for us and our management group has limited experience operating these types of businesses. Although we have retained the management personnel at IES and MDT, we cannot assure that such personnel will continue to work for us or that we will be successful in managing this new business. If we are unable to successfully operate these new businesses, especially the business of IES, our business, financial condition and results of operations could be materially impaired.

We cannot assure you of market acceptance of our military Zinc-Air battery products and electric vehicle technology.

Our batteries for the defense industry and a signal light powered by water-activated batteries for use in life jackets and other rescue apparatus are the only commercial Zinc-Air battery products we currently have available for sale. Significant resources will be required to develop and produce additional consumer products utilizing this technology on a commercial scale. Additional development will be necessary in order to commercialize our technology and each of the components of the Electric Fuel System for electric vehicles and defense products. We cannot assure you that we will be able to successfully develop, engineer or commercialize our Zinc-Air energy system, or that we will be able to develop products for commercial sale or that, if developed, they can be produced in commercial quantities or at acceptable costs or be successfully marketed. The likelihood of our future success must be considered in

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light of the risks, expenses, difficulties and delays frequently encountered in connection with the operation and development of a relatively early stage business and with development activities generally.

We believe that public pressure and government initiatives are important factors in creating an electric vehicle market. However, there can be no assurance that there will be sufficient public pressure or that further legislation or other governmental initiatives will be enacted, or that current legislation will not be repealed, amended, or have its implementation delayed. In addition, we are subject to the risk that even if an electric fuel vehicle market develops, a different form of zero emission or low emission vehicle will dominate the market. In addition, we cannot assure you that other solutions to the problem of containing emissions created by internal combustion engines will not be invented, developed and produced. Any other solution could achieve greater market acceptance than electric vehicles. The failure of a significant market for electric vehicles to develop would have a material adverse effect on our ability to commercialize this aspect of our technology. Even if a significant market for electric vehicles develops, there can be no assurance that our technology will be commercially competitive within that market.

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Our acquisition strategy involves various risks.

Part of our strategy is to grow through the acquisition of companies that will complement our existing operations or provide us with an entry into markets we do not currently serve. Growth through acquisitions involves substantial risks, including the risk of improper valuation of the acquired business and the risk of inadequate integration. There can be no assurance that suitable acquisition candidates will be available, that we will be able to acquire or manage profitably such additional companies or that future acquisitions will produce returns that justify our investments therein. In addition, we may compete for acquisition and expansion opportunities with companies that have significantly greater resources than we do. Furthermore, acquisitions could disrupt our ongoing business, distract the attention of our senior managers, make it difficult to maintain our operational standards, controls and procedures and subject us to contingent and latent risks that are different, in nature and magnitude, than the risks we currently face.

We may finance future acquisitions with cash from operations or additional debt or equity financings. There can be no assurance that we will be able to generate internal cash or obtain financing from external sources or that, if available, such financing will be on terms acceptable to us. The issuance of additional common stock to finance acquisitions may result in substantial dilution to our stockholders. Any debt financing may significantly increase our leverage and may involve restrictive covenants which limit our operations.

We may not successfully integrate our new acquisitions.

In light of our recent acquisitions of IES and MDT, our success will depend in part on our ability to manage the combined operations of these companies and to integrate the operations and personnel of these companies along with our other subsidiaries and divisions into a single organizational structure. There can be no assurance that we will be able to effectively integrate the operations of our subsidiaries and divisions and our newly-acquired businesses into a single organizational structure. Integration of these operations could also place additional pressures on our management as well as on our key technical resources. The failure to successfully manage this integration could have an adverse material effect on us.

If we are successful in acquiring additional businesses, we may experience a period of rapid growth that could place significant additional demands on, and require us to expand, our management, resources and management information systems. Our failure to manage any such rapid growth effectively could have a material adverse effect on our financial condition, results of operations and cash flows.

If we are unable to manage our growth, our operating results will be impaired.

We are currently experiencing a period of growth and development activity which could place a significant strain on our personnel and resources. Our activity has resulted in increased levels of responsibility for both existing and new management personnel. Many of our management personnel have had limited or no experience in managing growing companies. We have sought to manage our current and anticipated growth through the recruitment of additional

management and technical personnel and the implementation of internal systems and controls. However, our failure to manage growth effectively could adversely affect our results of operations.

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We will need to develop the experience to manufacture certain of our products in commercial quantities and at competitive prices.

We currently have limited experience in manufacturing in commercial quantities and have, to date, produced only limited quantities of military batteries and components of the batteries for electric vehicles. In order for us to be successful in the commercial market, these products must be manufactured to meet high quality standards in commercial quantities at competitive prices. The development of the necessary manufacturing technology and processes will require extensive lead times and the commitment of significant amounts of financial and engineering resources, which may not be available to us. We cannot assure you that we will successfully develop this technology or these processes. Moreover, we cannot assure you that we will be able to successfully implement the quality control measures necessary for commercial manufacturing.

Some of the components of our technology and our products pose potential safety risks which could create potential liability exposure for us.

Some of the components of our technology and our products contain elements that are known to pose potential safety risks. Also, because electric vehicle batteries contain large amounts of electrical energy, they may cause injuries if not handled properly. In addition to these risks, and although we incorporate safety procedures in our research, development and manufacturing processes, there can be no assurance that accidents in our facilities will not occur. Any accident, whether occasioned by the use of all or any part of our products or technology or by our manufacturing operations, could adversely affect commercial acceptance of our products and could result in significant production delays or claims for damages resulting from injuries. Any of these occurrences would materially adversely affect our operations and financial condition.

We may face product liability claims.

To date, there have been no material claims or threatened claims against us by users of our products, including the products manufactured by MDT, based on a failure of our products to perform as specified. In the event that any claims for substantial amounts were to be asserted against us, they could have a materially adverse effect on our financial condition and results of operations. We maintain general product liability insurance. However, there is no assurance that the amount of our insurance will be sufficient to cover potential claims or that the present amount of insurance can be maintained at the present level of cost, or at all.

Some of our business is dependent on government contracts.

Most of IES's customers to date have been in the public sector of the U.S., including the federal, state and local governments, and in the public sectors of a number of other countries, and most of MDT's customers have been in the public sector in Israel. A significant decrease in the overall level or allocation of defense spending or law enforcement in the U.S. or other countries could have a material adverse effect on our future results of operations and financial condition.

Sales to public sector customers are subject to a multiplicity of detailed regulatory requirements and public policies as well as to changes in training and purchasing priorities. Contracts with public sector customers may be conditioned upon the continuing availability of public funds, which in turn depends upon lengthy and complex budgetary procedures, and may be subject to certain pricing constraints. Moreover, U.S. government contracts and those of many international government customers may generally be terminated for a variety of factors when it is in the best interests of the government and contractors may be suspended or debarred for misconduct at the discretion of the

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government. There can be no assurance that these factors or others unique to government contracts or the loss or suspension of necessary regulatory licenses will not have a material adverse effect on our future results of operations and financial condition.

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Our fields of business are highly competitive.

The competition to develop defense and security products and electric vehicle battery systems, and to obtain funding for the development of these products, is, and is expected to remain, intense. Our defense and security products compete with other manufacturers of specialized training systems, including Firearms Training Systems, Inc., a producer of interactive simulation systems designed to provide training in the handling and use of small and supporting arms. In addition, we compete with manufacturers and developers of armor for cars and vans, including O'Gara-Hess & Eisenhardt, a division of Armor Holdings, Inc.

Our battery technology competes with other battery technologies, as well as other Zinc-Air technologies. The competition in this area of our business consists of development stage companies, major international companies and consortia of such companies, including battery manufacturers, automobile manufacturers, energy production and transportation companies, consumer goods companies and defense contractors. Many of our competitors have financial, technical, marketing, sales, manufacturing, distribution and other resources significantly greater than ours.

Various battery technologies are being considered for use in electric vehicles and defense and safety products by other manufacturers and developers, including the following: lead-acid, nickel-cadmium, nickel-iron, nickel-zinc, nickel-metal hydride, sodium-sulfur, sodium-nickel chloride, zinc-bromine, lithium-ion, lithium-polymer, lithium-iron sulfide, primary lithium, rechargeable alkaline and Zinc-Air.

If we are unable to compete successfully in each of our operating areas, especially in the defense and security products area of our business, our business and results of operations could be materially adversely affected.

Failure to receive required regulatory permits or to comply with various regulations to which we are subject could adversely affect our business.

Regulations in Europe, Israel, the United States and other countries impose various controls and requirements relating to various components of our business. While we believe that our current and contemplated operations conform to those regulations, we cannot assure you that we will not be found to be in non-compliance. We have applied for, and received, the necessary permits under the Israel Dangerous Substances Law, 5753-1993, required for the use of potassium hydroxide and zinc metal. However, there can be no assurance that changes in these regulations or the adoption of new regulations will not impose costly compliance requirements on us, subject us to future liabilities, or restrict our ability to operate our business.

Our business is dependent on patents and other proprietary rights that may be difficult to protect and could affect our ability to compete effectively.

Our ability to compete effectively will depend on our ability to maintain the proprietary nature of our technology and manufacturing processes through a combination of patent and trade secret protection, non-disclosure agreements and

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licensing arrangements. We hold patents, or patent applications, covering elements of our technology in the United States and in Europe. In addition, we have patent applications pending in the United States and in foreign countries, including the European Community, Israel and Japan. We intend to continue to file patent applications covering important features of our technology. We cannot assure you, however, that patents will issue from any of these pending applications or, if patents issue, that the claims allowed will be sufficiently broad to protect our technology. In addition, we cannot assure you that any of our patents will not be challenged or invalidated, that any of our issued patents will afford protection against a competitor or that third parties will not make infringement claims against us.

Litigation, or participation in administrative proceedings, may be necessary to protect our proprietary rights. This type of litigation can be costly and time consuming and could divert company resources and management attention to defend our rights, and this could harm us even if we were to be successful in the litigation. The invalidation of patents owned by or licensed to us could have a material adverse effect on our business. In addition, patent applications filed in foreign countries are subject to laws, rules and procedures that differ from those of the United States.

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Therefore, there can be no assurance that foreign patent applications related to patents issued in the United States will be granted. Furthermore, even if these patent applications are granted, some foreign countries provide significantly less patent protection than the United States. In the absence of patent protection, and despite our reliance upon our proprietary confidential information, our competitors may be able to use innovations similar to those used by us to design and manufacture products directly competitive with our products. In addition, no assurance can be given that others will not obtain patents that we will need to license or design around. To the extent any of our products are covered by third-party patents, we could require a license under such patents to develop and market our patents.

Despite our efforts to safeguard and maintain our proprietary rights, we may not be successful in doing so. In addition, competition is intense, and there can be no assurance that our competitors will not independently develop or patent technologies that are substantially equivalent or superior to our technology. Moreover, in the event of patent litigation, we cannot assure you that a court would determine that we were the first creator of inventions covered by our issued patents or pending patent applications or that we were the first to file patent applications for those inventions. If existing or future third-party patents containing broad claims were upheld by the courts or if we were found to infringe third party patents, we may not be able to obtain the required licenses from the holders of such patents on acceptable terms, if at all. Failure to obtain these licenses could cause delays in the introduction of our products or necessitate costly attempts to design around such patents, or could foreclose the development, manufacture or sale of our products. We could also incur substantial costs in defending ourselves in patent infringement suits brought by others and in prosecuting patent infringement suits against infringers.

We also rely on trade secrets and proprietary know-how that we seek to protect, in part, through non-disclosure and confidentiality agreements with our customers, employees, consultants, strategic partners and potential strategic partners. We cannot assure you that these agreements will not be breached, that we would have adequate remedies for any breach or that our trade secrets will not otherwise become known or be independently developed by competitors.

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We have undergone recent management changes.

In October 2002, Yehuda Harats, who had been our CEO since the inception of our company, resigned from his positions with us in order to pursue other interests. Our Board of Directors selected our long-time Chairman of the Board, Robert S. Ehrlich, to be our new President and CEO. Our success will depend to some extent on our ability to quickly and smoothly execute the change in leadership as a result of this change of CEO.

We are dependent on key personnel and our business would suffer if we fail to retain them.

We are highly dependent on certain members of our management and engineering staff, and the loss of the services of one or more of these persons could adversely affect us. We are especially dependent on the services of our Chairman, President and Chief Executive Officer, Robert S. Ehrlich. The loss of Mr. Ehrlich could have a material adverse effect on us. We are party to an employment agreement with Mr. Ehrlich, which agreement expires at the end of 2003. We do not have key-man life insurance on Mr. Ehrlich.

There are risks involved with the international nature of our business.

A significant portion of our sales are made to customers located outside the U.S., primarily in Europe and Asia. In 2000, 2001 and 2002, without taking account of revenues derived from discontinued operations, 45%, 49%, and 56%, respectively, of our revenues, including the revenues of IES and MDT on a pro forma basis, were derived from sales to customers located outside the U.S. We expect that our international customers will continue to account for a substantial portion of our revenues in the near future. Sales to international customers may be subject to political and economic risks, including political instability, currency controls, exchange rate fluctuations, foreign taxes, longer payment cycles and changes in import/export regulations and tariff rates. In addition, various forms of protectionist trade legislation have been and in the future may be proposed in the U.S. and certain other countries. Any resulting changes in current tariff structures or other trade and monetary policies could adversely affect our sales to international customers.

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We may be subject to increased United States taxation.

We believe that Electric Fuel and our wholly-owned Israeli subsidiary EFL will be treated as personal holding companies for purposes of the personal holding company (PHC) rules of the Internal Revenue Code of 1986. Under the PHC rules, a PHC is subject to a special 39.6% tax on its "undistributed PHC income," in addition to regular income tax. We believe that Electric Fuel and EFL have not had any material undistributed PHC income. However, no assurance can be given that Electric Fuel and EFL will not have undistributed PHC income in the future.

Approximately 22.9% of the stock of EFL was deemed to be beneficially owned (indirectly through their ownership of our stock by application of certain attribution rules) as of April 15, 2003 by four United States citizens: Leon S. Gross, Austin W. Marx and David M. Greenhouse, and Robert S. Ehrlich (information with respect to the stockholdings of Messrs. Marx and Greenhouse is based on a Schedule 13G filed with the Securities and Exchange Commission on February 11, 2002, as amended on February 13, 2003). If more than 50% of either (i) the voting power of our stock, or (ii) the total value of our stock, is ever

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acquired or deemed to be acquired by five or fewer individuals (including, if applicable, those individuals who currently own an aggregate of 22.9% of our shares) who are United States citizens or residents, EFL would satisfy the foreign personal holding company (FPHC) stock ownership test under the Internal Revenue Code, and we could be subject to additional U.S. taxes (including PHC tax) on any "undistributed FPHC income" of EFL. We believe that EFL has not had any material undistributed FPHC income. However, no assurance can be given that EFL will not become a FPHC and have undistributed FPHC income in the future.

Investors should not purchase our common stock with the expectation of receiving cash dividends.

We currently intend to retain any future earnings for funding growth and, as a result, do not expect to pay any cash dividends in the foreseeable future.

Market-Related Risks

The price of our common stock is volatile.

The market price of our common stock has been volatile in the past and may change rapidly in the future. The following factors, among others, may cause significant volatility in our stock price:

- o Announcements by us, our competitors or our customers;
- o The introduction of new or enhanced products and services by us or our competitors;
- o Changes in the perceived ability to commercialize our technology compared to that of our competitors;
- o Rumors relating to our competitors or us;
- o Actual or anticipated fluctuations in our operating results; and
- o General market or economic conditions.

If our shares were to be delisted, our stock price might decline further and we might be unable to raise additional capital.

One of the continued listing standards for our stock on the Nasdaq National Market is the maintenance of a \$1.00 bid price. Our stock price is currently trading below \$1.00, and has been since October 18, 2002. On December 6, 2002, Nasdaq notified us of our failure to meet the continued listing standards, and informed us that unless our stock closes for ten consecutive trading days with a bid price in excess of \$1.00 prior to March 6, 2003 (subsequently extended, as a result of an amendment to Nasdaq's listing regulations, to June 4, 2003), Nasdaq would notify us of its intent to delist our stock from the Nasdaq National Market. Should Nasdaq notify us of its intent to delist our stock, we would have the opportunity to appeal this notification, although there can be no assurances that this appeal would be resolved favorably.

There can be no assurance that our common stock will remain listed on the Nasdaq National Market. If our common stock were to be delisted from the Nasdaq National Market, we might apply to be listed on the Nasdaq SmallCap market; however, there can be no assurance that we would be approved for listing on the Nasdaq SmallCap market, which has the same \$1.00 minimum bid and other similar

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requirements as the Nasdaq National Market. If we were to move to the Nasdaq SmallCap market, current Nasdaq regulations would give us the opportunity to obtain an additional 180-day grace period and an additional 90-day grace period after that if we meet certain net income, shareholders' equity or market capitalization criteria. While our stock would continue to trade on the over-the-counter bulletin board following any delisting from the Nasdaq, any such delisting of our common stock could have an adverse effect on the market price of, and the efficiency of the trading market for, our common stock. Also, if in the future we were to determine that we need to seek additional equity capital, it could have an adverse effect on our ability to raise capital in the public equity markets.

In addition, if we fail to maintain Nasdaq listing for our securities, and no other exclusion from the definition of a "penny stock" under the Exchange Act is available, then any broker engaging in a transaction in our securities would be required to provide any customer with a risk disclosure document, disclosure of market quotations, if any, disclosure of the compensation of the broker-dealer and its salesperson in the transaction and monthly account statements showing the market values of our securities held in the customer's account. The bid and offer quotation and compensation information must be provided prior to effecting the transaction and must be contained on the customer's confirmation. If brokers become subject to the "penny stock" rules when engaging in transactions in our securities, they would become less willing to engage in transactions, thereby making it more difficult for our stockholders to dispose of their shares.

We are subject to significant influence by some stockholders that may have the effect of delaying or preventing a change in control.

As of April 15, 2003, our directors, executive officers and principal stockholders and their affiliates (including Leon S. Gross (11.6%), Austin W. Marx and David M. Greenhouse (8.0%), IES Electronics Industries Ltd. (6.2%), and Robert S. Ehrlich (4.3%)) collectively are deemed beneficially to own approximately 29.0% of the outstanding shares of our common stock, including options and warrants exercisable within 60 days of April 15, 2003 (information with respect to the stockholdings of Messrs. Marx and Greenhouse is based on a Schedule 13G filed with the Securities and Exchange Commission on February 11, 2002, as amended on February 13, 2003, and information with respect to the stockholdings of IES Electronics Industries Ltd. is based on a Schedule 13D filed with the Securities and Exchange Commission on August 12, 2002, as amended on October 28, 2002 and January 9, 2003). As a result, these stockholders are able to exercise significant influence over matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. This concentration of ownership may also have the effect of delaying, preventing or discouraging a change in control of Electric Fuel.

Pursuant to a voting rights agreement dated September 30, 1996, as amended, between Leon S. Gross, Robert S. Ehrlich, Yehuda Harats and us, Lawrence M. Miller, Mr. Gross's advisor, is entitled to be nominated to serve on our board of directors so long as Mr. Gross, his heirs or assigns retain beneficial ownership of at least 1,375,000 shares of common stock. In addition, under the voting rights agreement, Mr. Gross and Messrs. Ehrlich and Harats agreed to vote and take all necessary action so that Messrs. Ehrlich, Harats and Miller shall serve as members of the board of directors until the earlier of December 28, 2004 or our fifth annual meeting of stockholders after December 28, 1999. Mr. Harats resigned as a director in 2002; however, we believe that Mr. Harats must continue to comply with the terms of this agreement.

A substantial number of our shares are available for sale in the public market and sales of those shares could adversely affect our stock price.

Sales of a substantial number of shares of common stock into the public

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market, or the perception that those sales could occur, could adversely affect our stock price or could impair our ability to obtain capital through an offering of equity securities. As of April 15, 2003, we had 35,146,261 shares of common stock issued and outstanding. Of these shares, 27,610,658, including the shares being registered for resale under this prospectus and under another

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registration statement filed by us, will after the date of this prospectus be freely transferable without restriction under the Securities Act of 1933 and 7,526,478 may be sold subject to the volume restrictions, manner-of-sale provisions and other conditions of Rule 144 under the Securities Act of 1933.

In connection with a stock purchase agreement dated September 30, 1996 between Leon S. Gross and us, we also entered into a registration rights agreement with Mr. Gross dated September 30, 1996, setting forth registration rights with respect to the shares of common stock issued to Mr. Gross in connection with the offering. These rights include the right to make two demands for the registration of the shares of our common stock owned by Mr. Gross. In addition, Mr. Gross was granted unlimited rights to "piggyback" on registration statements that we file for the sale of our common stock. Mr. Gross presently owns 3,547,870 shares, of which 1,538,462 have never been registered.

In addition, pursuant to the terms of their employment agreements with us, both Yehuda Harats and Robert S. Ehrlich have a right to demand registration of their shares. Of the shares owned by Mr. Harats, 435,404 shares have never been registered, and of the 688,166 shares owned by Mr. Ehrlich, 453,933 shares have never been registered.

Exercise of our warrants, options and convertible debt could adversely affect our stock price and will be dilutive.

As of April 15, 2003, there were outstanding warrants to purchase a total of 9,421,238 shares of our common stock at a weighted average exercise price of \$1.87 per share, options to purchase a total of 5,715,955 shares of our common stock at a weighted average exercise price of \$2.16 per share, of which 5,131,032 were vested and exercisable within 60 days of the date of this prospectus, at a weighted average exercise price of \$2.15 per share, and outstanding debentures and promissory notes convertible into a total of 6,032,721 shares of our common stock at a weighted average conversion price of \$0.65 per share. Holders of our options, warrants and convertible debt will probably exercise or convert them only at a time when the price of our common stock is higher than their respective exercise or conversion prices. Accordingly, we may be required to issue shares of our common stock at a price substantially lower than the market price of our stock. This could adversely affect our stock price. In addition, if and when these shares are issued, the percentage of our common stock that existing stockholders own will be diluted.

Our certificate of incorporation and bylaws and Delaware law contain provisions that could discourage a takeover.

Provisions of our amended and restated certificate of incorporation may have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from attempting to acquire, control of us. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our common stock. These provisions:

- o divide our board of directors into three classes serving staggered three-year terms;

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- o only permit removal of directors by stockholders "for cause," and require the affirmative vote of at least 85% of the outstanding common stock to so remove; and
- o allow us to issue preferred stock without any vote or further action by the stockholders.

The classification system of electing directors and the removal provision may tend to discourage a third-party from making a tender offer or otherwise attempting to obtain control of us and may maintain the incumbency of our board of directors, as the classification of the board of directors increases the difficulty of replacing a majority of the directors. These provisions may have the effect of deferring hostile takeovers, delaying changes in our control or management, or may make it more difficult for stockholders to take certain corporate actions. The amendment of any of these provisions would require approval by holders of at least 85% of the outstanding common stock.

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Israel-Related Risks

A significant portion of our operations takes place in Israel, and we could be adversely affected by the economic, political and military conditions in that region.

The offices and facilities of two of our principal subsidiaries, EFL and MDT, are located in Israel (in Beit Shemesh and Lod, respectively, both of which are within Israel's pre-1967 borders). We conduct research and development activities through EFL, and most of our senior management is located at EFL's facilities. Although we expect that most of our sales will be made to customers outside Israel, we are nonetheless directly affected by economic, political and military conditions in that country. Accordingly, any major hostilities involving Israel or the interruption or curtailment of trade between Israel and its present trading partners could have a material adverse effect on our operations. Since the establishment of the State of Israel in 1948, a number of armed conflicts have taken place between Israel and its Arab neighbors and a state of hostility, varying in degree and intensity, has led to security and economic problems for Israel.

Historically, Arab states have boycotted any direct trade with Israel and to varying degrees have imposed a secondary boycott on any company carrying on trade with or doing business in Israel. Although in October 1994, the states comprising the Gulf Cooperation Council (Saudi Arabia, the United Arab Emirates, Kuwait, Dubai, Bahrain and Oman) announced that they would no longer adhere to the secondary boycott against Israel, and Israel has entered into certain agreements with Egypt, Jordan, the Palestine Liberation Organization and the Palestinian Authority, Israel has not entered into any peace arrangement with Syria or Lebanon. Moreover, since September 2000, there has been a significant deterioration in Israel's relationship with the Palestinian Authority, and a significant increase in terror and violence. Efforts to resolve the problem have failed to result in an agreeable solution. Continued hostilities between the Palestinian community and Israel and any failure to settle the conflict may have a material adverse effect on our business and us. Moreover, the current political and security situation in the region, including the war in Iraq, has already had an adverse effect on the economy of Israel, which in turn may have an adverse effect on us.

Many of our employees are currently obligated to perform annual reserve

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duty in the Israel Defense Forces and are subject to being called for active military duty at any time. No assessment can be made of the full impact of such requirements on us in the future, particularly if emergency circumstances occur, and no prediction can be made as to the effect on us of any expansion of these obligations. However, further deterioration of hostilities with the Palestinian community into a full-scale conflict might require more widespread military reserve service by some of our employees, which could have a material adverse effect on our business.

Service of process and enforcement of civil liabilities on us and our officers may be difficult to obtain.

We are organized under the laws of the State of Delaware and will be subject to service of process in the United States. However, approximately 49% of our assets are located outside the United States. In addition, two of our directors and all of our executive officers are residents of Israel and all or a substantial portion of the assets of such directors and executive officers are located outside the United States.

There is doubt as to the enforceability of civil liabilities under the Securities Act of 1933, as amended, and the Securities Exchange Act of 1934, as amended, in original actions instituted in Israel. However, subject to certain time limitations and other conditions, Israeli courts may enforce final judgments of United States courts for liquidated amounts in civil matters, including judgments based upon the civil liability provisions of the Securities Act and the Exchange Act. As a result, it may not be possible for investors to enforce or effect service of process upon these directors and executive officers or to judgments of U.S. courts predicated upon the civil liability provisions of U.S. laws against our assets, as well as the assets of these directors and executive officers. In addition, awards of punitive damages in actions brought in the U.S. or elsewhere may be unenforceable in Israel.

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Any failure to obtain the tax benefits from the State of Israel that we expect to receive could negatively impact our plans and prospects.

We benefit from various Israeli government programs, grants and tax benefits, particularly as a result of the "approved enterprise" status of a substantial portion of our existing facilities and the receipt of grants from the Office of the Chief Scientist of the Israeli Ministry of Industry and Trade. To be eligible for some of these programs, grants and tax benefits, we must continue to meet certain conditions, including producing in Israel and making specified investments in fixed assets. If we fail to meet such conditions in the future, we could be required to refund grants already received, adjusted for inflation and interest. From time to time, the government of Israel has discussed reducing or eliminating the benefits available under approved enterprise programs. We cannot assure you that these programs and tax benefits will be continued in the future at their current levels or at all. The Government of Israel has announced that programs receiving approved enterprise status in 1996 and thereafter will be entitled to a lower level of government grants than was previously available. The termination or reduction of certain programs and tax benefits (particularly benefits available to us as a result of the approved enterprise status of a substantial portion of our existing facilities and approved programs and as a recipient of grants from the office of the Chief Scientist) could have a material adverse effect on our business, results of operations and financial condition. In addition, EFL has granted a floating lien (that is, a lien that applies not only to assets owned at the time but also to after-acquired assets) over all of EFL's assets as a security to the

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State of Israel to secure its obligations under the approved enterprise programs.

Our grants from the Israeli government impose certain restrictions on us.

Since 1992, our Israeli subsidiary, EFL, has received funding from the Office of the Chief Scientist of the Israel Ministry of Industry and Trade relating to the development of our zinc-air battery products, such as our electric vehicle and our batteries and chargers for consumer products. Between 1998 and 2000, we have also received funds from the Israeli-U.S. Bi-National Industrial Research and Development (BIRD) Foundation. Through the end of 2002, we have received an aggregate of \$9.9 million from grants from the Chief Scientist and \$772,000 from grants from BIRD, and we may receive future grants, the amounts of which would be determined at the time of application. The funding from the Chief Scientist prohibits the transfer or license of know-how and the manufacture of resulting products outside of Israel without the permission of the Chief Scientist. Although we believe that the Chief Scientist does not unreasonably withhold this permission if the request is based upon commercially justified circumstances and any royalty obligations to the Chief Scientist are sufficiently assured, the matter is solely within the discretion of the Chief Scientist, and we cannot be sure that such consent, if requested, would be granted upon terms satisfactory to us or granted at all. Without such consent, we would be unable to manufacture any products developed by this research outside of Israel, even if it would be less expensive for us to do so. Additionally, current regulations require that, in the case of the approved transfer of manufacturing rights out of Israel, the maximum amount to be repaid through royalty payments would be increased to between 120% and 300% of the amount granted, depending on the extent of the manufacturing to be conducted outside of Israel, and that an increased royalty rate of up to 5% would be applied. These restrictions could adversely affect our potential revenues and net income from the sale of such products.

Exchange rate fluctuations between the U.S. dollar and the Israeli NIS may negatively affect our earnings.

Although a substantial majority of our revenues and a substantial portion of our expenses are denominated in U.S. dollars, a significant portion of our costs, including personnel and facilities-related expenses, is incurred in New Israeli Shekels (NIS). Inflation in Israel will have the effect of increasing the dollar cost of our operations in Israel, unless it is offset on a timely basis by a devaluation of the NIS relative to the dollar.

Some of our agreements are governed by Israeli law.

Israeli law governs both our agreement with IES and our agreement with MDT, as well as certain other agreements, such as our lease agreements on our subsidiaries' premises in Israel. While Israeli law differs in certain respects from American law, we do not believe that these differences materially adversely affect our rights or remedies under these agreements.

INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

When used in this prospectus, the words "expects," "anticipates," "estimates" and similar expressions identify forward-looking statements. These statements are "forward-looking" statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. These statements, which include statements under the caption "Risk Factors" and elsewhere in this

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prospectus, refer to the stage of development of our products, the uncertainty of the market for disposable cell phone batteries, significant future capital requirements and our plans to implement our growth strategy, continue our research and development, expand our manufacturing capacity, develop strategic relationships for marketing and other purposes and carefully manage our growth. The forward-looking statements also include our expectations concerning factors affecting the markets for our products.

These forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from the results that we anticipate. These risks and uncertainties include, but are not limited to, those risks discussed in this prospectus and in the documents incorporated by reference in this prospectus.

All such forward-looking statements are current only as of the date on which such statements were made. We assume no obligation to update these forward-looking statements or to update the reasons actual results could differ materially from the results anticipated in the forward-looking statements.

You should rely only on the information in this prospectus and the additional information described under the heading "Where You Can Find Additional Information." We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely upon it. You should assume that the information in this prospectus was accurate on the date of the front cover of this prospectus only. Our business, financial condition, results of operations and prospects may have changed since that date.

ABOUT THE OFFERING

We are registering the resale of our common stock by the selling stockholders. The selling stockholders and the specific number of shares that they each may resell through this prospectus are listed on page 19. The shares offered for resale by this prospectus include the following:

- o 3,250,000 shares of common stock that are presently outstanding and owned by the selling stockholders;
- o 3,500,100 shares of common stock that may be acquired by the selling stockholders upon the exercise of outstanding warrants;
- o 5,468,750 shares of common stock that may be acquired by the selling stockholders upon the conversion of outstanding debentures; and
- o 387,301 shares of common stock that were issued by us in pre-payment of interest on our outstanding debentures between January 1, 2003 and September 30, 2003, and that are presently outstanding and owned by the selling stockholders.

USE OF PROCEEDS

We will not receive any proceeds from the resale of our common stock by the selling stockholders. We may receive proceeds from the exercise of the warrants held by the selling stockholders, although they are not obligated to, and we can give no assurance that they will, exercise the warrants. The warrants are exercisable on a cash basis unless the resale of the shares under this registration statement is not effective at the time the warrant is exercised, in which case the holder may exercise the warrant on a cashless basis. If all warrants are exercised in full on a cash basis, we estimate that we will receive gross proceeds of \$746,688. We intend to use such proceeds, if any, for working

capital purposes. Pending the use of any such proceeds, we intend to invest these funds in short-term, interest bearing investment-grade securities.

SELLING STOCKHOLDERS

Shares Issued in Connection with Our Acquisition of IES

IES Technologies Inc. acquired 3,250,000 shares of common stock from us in connection with our acquisition of IES. IES Technologies, Inc. subsequently sold 1,625,000 of such shares to the other selling stockholders in a private transaction, as follows: 500,000 shares to ZLP Master Technology Fund, Ltd.; 425,000 shares to Smithfield Fiduciary LLC; 587,500 shares to Vertical Ventures Investments, LLC; and 112,500 shares to Vertical Ventures LLC. The shares of common stock issued to IES Technologies Inc. were issued in reliance upon the exemption from registration provided by Section 4(2) of the Securities Act as transactions by an issuer not involving a public offering. See "Summary - Recent Developments." The shares of common stock held by the other selling stockholders were transferred to them in reliance upon an exemption from registration provided under the Securities Act. Smithfield Fiduciary LLC, which is an affiliate of a broker-dealers, has represented to us that it purchased its shares in the ordinary course of business and that, at the time that it acquired our securities, it had no agreements or understandings, directly or indirectly, with any person to distribute them.

Shares Issued or Issuable in Connection with Our Sale of Convertible Debentures

On December 31, 2002, we entered into a private placement with the selling stockholders (other than I.E.S. Technologies Inc.) under a Securities Purchase Agreement, whereby we issued convertible debentures for aggregate gross proceeds equal to \$3,500,000. The Debentures earn interest at a rate of 9% per annum, payable in cash quarterly except with respect to the first nine months of interest, which was paid in advance in shares of our common stock (subject to adjustment in cash in the event of a diminution in the market price of our common stock between December 31, 2002 and the quarterly interest payment date). Under the terms of the Debenture, the principal amount is convertible, at the option of the holder, into a number of shares of our common stock calculated by dividing the unpaid principal amount of the Debenture by the conversion price of \$0.75 per share, which was adjusted in April 2003 to \$0.64 per share ("Conversion Price"). The Debentures are secured by substantially all of our assets.

Under the Securities Purchase Agreement, the selling stockholders who purchased debentures were also granted warrants to purchase an aggregate of 3,500,100 shares of our common stock, which was calculated, as to each selling stockholder, as follows: 75% of the quotient obtained by dividing the aggregate principal amount of the selling stockholder's Debenture by the initial Conversion Price. The warrants have a five-year term and are exercisable at any time after the date of issuance. The warrants have an exercise price of \$0.64 per share.

We entered into a Registration Rights Agreement with such selling stockholders under each of the Securities Purchase Agreements pursuant to which we agreed to register our shares of common stock issuable to the debenture holders.

The terms of the debentures and the warrants whose underlying shares of common stock are included for resale under this prospectus prohibit conversion of the debentures or exercise of the warrants to the extent that conversion of

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the debentures would result in the holder, together with its affiliates, beneficially owning in excess of 4.999% or 9.999% of our outstanding shares of common stock, and to the extent that exercise of the warrants would result in the holder, together with its affiliates, beneficially owning in excess of 4.999% or 9.999% of our outstanding shares of common stock. These limitations do not preclude a holder from converting or exercising a debenture or warrant, respectively, and selling shares underlying the debenture or warrant in stages over time where each stage does not cause the holder and its affiliates to beneficially own shares in excess of the limitation amounts. The footnotes to the table describe beneficial ownership adjustments required by these limitations, if any.

In addition to the above restrictions, the outstanding debentures and warrants each contain a provision which precluded us from issuing, in connection with the transactions described below, and at prices less than the greater of book or market value of our common stock, a number of shares of our common stock which, in the aggregate

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for such transactions, would exceed in excess of 19.99% of our common stock outstanding as of the date we consummated such transactions. The foregoing limitation will cease to apply in the event that we obtain, prior to any such prohibited issuance, approval of our stockholders under applicable Nasdaq Marketplace Rules to issue in connection with these transactions an aggregate number of shares equal to or in excess of 20% of outstanding shares of common stock.

The debentures and warrants issued to the selling stockholders (other than I.E.S. Technologies Inc.) were issued in reliance upon the exemption from registration provided by Section 4(2) of the Securities Act as transactions by an issuer not involving a public offering.

Selling Stockholder Table

The following table identifies the selling stockholders and indicates (i) the nature of any position, office or other material relationship that each selling stockholder has had with us during the past three years (or any of our predecessors or affiliates) and (ii) the number of shares of our common stock owned by the selling stockholder prior to the offering, the number of shares to be offered for the selling stockholder's account and the number of shares and percentage of outstanding shares to be owned by the selling stockholder after completion of the offering.

Beneficial ownership is determined in accordance with Rule 13d-3 promulgated by the Securities and Exchange Commission, and generally includes voting or investment power with respect to securities. Except as indicated in the footnotes to the table, we believe each holder possesses sole voting and investment power with respect to all of the shares of common stock owned by that holder, subject to community property laws where applicable. In computing the number of shares beneficially owned by a holder and the percentage ownership of that holder, shares of common stock subject to options or warrants or underlying debentures held by that holder that are currently exercisable or convertible or are exercisable or convertible within 60 days after the date of the table are deemed outstanding. Those shares, however, are not deemed outstanding for the purpose of computing the percentage ownership of any other person or group.

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NAME OF SELLING STOCKHOLDER	NUMBER OF SHARES BENEFICIALLY OWNED PRIOR TO OFFERING (1)	SHARES BEING OFFERED
-----	-----	-----
IES Technologies Inc.	2,188,971 (3)	1,625,000
ZLP Master Technology Fund, Ltd (8)	5,846,373 (4)	5,846,373
Smithfield Fiduciary LLC (8)	3,098,186 (5)	3,098,186
Vertical Ventures Investments, LLC (8)	1,924,092 (6)	1,924,092
Vertical Ventures, LLC (8)	112,500 (7)	112,500

* Less than 1%.

- (1) Assumes that the selling stockholders acquire no additional shares of common stock before completion of this offering.
- (2) Assumes that all of the shares offered by the selling stockholders under this prospectus are sold.
- (3) Includes 563,971 shares issuable upon conversion of a \$450,000 promissory note due June 30, 2004. The person or persons who have the right to vote and/or dispose of the shares held by this selling shareholder is IES Electronics Industries Ltd., a public company trading on the Tel-Aviv Stock Exchange.
- (4) Consists of (i) 500,000 shares of common stock purchased by this selling shareholder from IES Technologies Inc. in December 2002, (ii) 221,315 shares of common stock issued by us in pre-payment of the first nine months of interest on our outstanding debentures, (iii) 3,125,000 shares of common stock that may be issued at a conversion price of \$0.64 per share upon conversion of a 9% secured convertible debenture issued in connection with a securities purchase agreement dated December 31, 2002, and (iv) 2,000,058 shares of common stock that may be issued at an exercise price of \$0.64 per share upon exercise of warrants issued in connection with a securities purchase agreement dated December 31, 2002. Stuart J. Zimmer has voting control and investment discretion over the shares of common stock held by this selling stockholder.

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- (5) Consists of (i) 425,000 shares of common stock purchased by this selling shareholder from IES Technologies Inc. in December 2002, (ii) 110,657 shares of common stock issued by us in pre-payment of the first nine months of interest on our outstanding debentures, (iii) 1,562,500 shares of common stock that may be issued at a conversion price of \$0.64 per share upon conversion of a 9% secured convertible debenture issued in connection with a securities purchase agreement dated December 31, 2002, and (iv) 1,000,029 shares of common stock that may be issued at an exercise price of \$0.64 per share upon exercise of warrants issued in connection with a securities purchase agreement dated December 31, 2002. Highbridge Capital Management, LLC ("Highbridge") is the trading manager of Smithfield Fiduciary LLC ("Smithfield") and consequently has voting control and investment discretion over the shares of common stock held by Smithfield. Glenn Dubin and Henry Swieca control Highbridge. Each of Highbridge and Messrs. Dubin and Swieca disclaims beneficial ownership of the shares held by Smithfield.
- (6) Consists of (i) 587,500 shares of common stock purchased by this selling shareholder from IES Technologies Inc. in December 2002, (ii) 55,329 shares of common stock issued by us in pre-payment of the first nine months of

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interest on our outstanding debentures, (iii) 781,250 shares of common stock that may be issued at a conversion price of \$0.64 per share upon conversion of a 9% secured convertible debenture issued in connection with a securities purchase agreement dated December 31, 2002, and (iv) 500,013 shares of common stock that may be issued at an exercise price of \$0.64 per share upon exercise of warrants issued in connection with a securities purchase agreement dated December 31, 2002. Joshua Silverman has voting control and investment discretion over the shares of common stock held by this selling stockholder.

- (7) Joshua Silverman has voting control and investment discretion over the shares of common stock held by this selling stockholder.
- (8) The terms of the debentures and the warrants whose underlying shares of common stock are included for resale under this prospectus prohibit conversion of the debentures or exercise of the warrants to the extent that conversion of the debentures would result in the holder, together with its affiliates, beneficially owning in excess of 4.999% or 9.999% of our outstanding shares of common stock, and to the extent that exercise of the warrants would result in the holder, together with its affiliates, beneficially owning in excess of 4.999% or 9.999% of our outstanding shares of common stock.

PLAN OF DISTRIBUTION

The selling stockholders and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices. The selling stockholders may use any one or more of the following methods when selling shares:

- o ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- o 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;
- o purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- o an exchange distribution in accordance with the rules of the applicable exchange;
- o privately negotiated transactions;
- o short sales
- o broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- o a combination of any such methods of sale; and
- o any other method permitted pursuant to applicable law.

The selling shareholders may enter into hedging transactions with third parties, which may in turn engage in short sales of the common stock into which the debentures are convertible or warrants are exercisable in the course of

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hedging the position they assume. The selling shareholders may also enter into short positions or other derivative transactions relating to the common stock into which the debentures are convertible or warrants are exercisable, or interests in the common stock, and deliver the common stock, or interests in the common stock, to close out their short or other positions or otherwise settle short sales or other transactions, or loan or pledge the common stock into which the debentures are convertible or warrants are exercisable, or interests in the common stock, to third parties that in turn may dispose of these securities.

The selling stockholders may also sell shares under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the selling stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The selling stockholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved.

The selling stockholders may from time to time pledge or grant a security interest in some or all of the shares of our common stock or warrants owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock from time to time under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933 amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and any broker-dealers or agents that are involved in selling the shares may be deemed to be "underwriters" within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each selling stockholder has informed us that it does not have any agreement or understanding, directly or indirectly, with any person to distribute the common stock.

We are required to pay all fees and expenses incident to the registration of the shares and up to \$10,000 of the fees and disbursements of special counsel to the selling stockholders (other than IES Technologies Inc.). We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

The selling stockholders are subject to applicable provisions of the Exchange Act and the Commission's rules and regulations, including Regulation M, which provisions may limit the timing of purchases and sales of the shares by the selling stockholders. We will make copies of this prospectus available to the selling stockholders and have informed them of the need to deliver copies of this prospectus to purchasers at or prior to the time of any sale of the shares.

In order to comply with certain states' securities laws, if applicable, the selling stockholders may sell the shares in those jurisdictions only through registered or licensed brokers or dealers. In certain states the selling stockholders may not sell the shares unless the shares have been registered or qualified for sale in such state, or unless an exemption from registration or qualification is available and is obtained.

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Our common stock is currently traded on The Nasdaq National Market under the symbol "ARTX."

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DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of 100,000,000 shares of common stock par value \$.01 per share, and 1,000,000 shares of preferred stock, par value \$.01 per share. As of December 31, 2002, 35,146,261 shares of common stock were issued and outstanding, 555,333 shares of common stock were held as treasury shares, and no shares of preferred stock were issued and outstanding.

The additional shares of our authorized stock available for issuance might be issued at times and under circumstances so as to have a dilutive effect on earnings per share and on the equity ownership of the holders of our common stock. The ability of our board of directors to issue additional shares of stock could enhance the board's ability to negotiate on behalf of the stockholders in a takeover situation but could also be used by the board to make a change-in-control more difficult, thereby denying stockholders the potential to sell their shares at a premium and entrenching current management. The following description is a summary of the material provisions of our capital stock. You should refer to our amended and restated certificate of incorporation, as amended, and bylaws for additional information.

Common Stock

The holders of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of stockholders. Except as required under Delaware law or the rules of the Nasdaq National Market, the rights of stockholders may not be modified otherwise than by a vote of a majority or more of the shares outstanding. Subject to preferences that may be applicable to any outstanding shares of preferred stock, the holders of common stock are entitled to receive ratably any dividends as may be declared by the board of directors out of funds legally available for the payment of dividends. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share ratably in all assets, subject to prior distribution rights of the preferred stock, if any, then outstanding. Holders of common stock have no preemptive rights or rights to convert their common stock into any other securities. 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.

Preferred Stock

Our board of directors has the authority, within the limitations and restrictions stated in our amended and restated certificate of incorporation and without shareholder approval, to provide by resolution for the issuance of shares of preferred stock, and to fix the rights, preferences, privileges and restrictions thereof, including dividend rights, conversion rights, voting rights, terms of redemption, liquidation preference and the number of shares constituting any series of the designation of such series. The issuance of preferred stock could have the effect of decreasing the market price of the common stock, impeding or delaying a possible takeover and adversely affecting the voting and other rights of the holders of our common stock. At present, we have no plans to issue preferred stock.

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Stock Options

As of April 15, 2003:

- o options to purchase a total of 5,715,955 shares of common stock at a weighted average exercise price of \$2.16 per share were outstanding, 5,131,032 of which were vested and exercisable within 60 days of the date of this prospectus, at a weighted average exercise price of \$2.15 per share; and
- o up to 4,215,147 additional shares of common stock may be issued under our various stock option plans.

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Warrants

As of April 15, 2003, there were outstanding warrants to purchase a total of 9,421,238 shares of common stock at a weighted average exercise price of \$1.87 per share.

Debt Instruments

As of April 15, 2003, there were outstanding debentures and promissory notes convertible into a total of 6,032,721 shares of common stock at a weighted average conversion price of \$0.65 per share.

Certain Charter Provisions

Provisions of our amended and restated certificate of incorporation may have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from attempting to acquire, control of us. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our common stock. These provisions:

- o divide our board of directors into three classes serving staggered three-year terms;
- o only permit removal of directors by stockholders "for cause," and require the affirmative vote of at least 85% of the outstanding common stock to so remove; and
- o allow us to issue preferred stock without any vote or further action by the stockholders.

The classification system of electing directors and the removal provision may tend to discourage a third-party from making a tender offer or otherwise attempting to obtain control of us and may maintain the incumbency of our board of directors, as the classification of the board of directors increases the difficulty of replacing a majority of the directors. These provisions may have the effect of deferring hostile takeovers, delaying changes in our control or management, or may make it more difficult for stockholders to take certain corporate actions. The amendment of any of these provisions would require approval by holders of at least 85% of the outstanding common stock.

LEGAL MATTERS

Lowenstein Sandler PC, Roseland, New Jersey will pass upon the validity of the shares of common stock offered by this prospectus for us.

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EXPERTS

Our consolidated financial statements for the fiscal years ended December 31, 2001 and 2000, which have been incorporated by reference in this prospectus, have been audited by independent accountants Kost Forer & Gabbay (a member firm of Ernst & Young Global). Such financial statements have been so included in reliance on the report of such independent accountants given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission. You can read and copy any materials we file with the Securities and Exchange Commission at its Public Reference Room at 450 Fifth Street, N.W., Washington, D.C. 20549 and at its regional offices located at The Woolworth Building, 233 Broadway, New York, New York 10279 and at 175 West Jackson Boulevard, Suite 900, Chicago, Illinois 60604. You can obtain information about the operations of the Securities and Exchange Commission Public Reference Room by calling the Securities and Exchange Commission at 1-800-SEC-0330. The Securities and Exchange Commission also maintains a Website that contains information we file electronically with the Securities and Exchange Commission, which you can access over the Internet at <http://www.sec.gov>.

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This prospectus is part of a Form S-3 registration statement that we have filed with the Securities and Exchange Commission relating to the shares of our common stock being offered hereby. This prospectus does not contain all of the information in the Registration Statement and its exhibits. The Registration Statement, its exhibits and the documents incorporated by reference in this prospectus and their exhibits, all contain information that is material to the offering of the common stock. Whenever a reference is made in this prospectus to any of our contracts or other documents, the reference may not be complete. You should refer to the exhibits that are a part of the Registration Statement in order to review a copy of the contract or documents. The registration statement and the exhibits are available at the Securities and Exchange Commission's Public Reference Room or through its Website.

INCORPORATION OF DOCUMENTS BY REFERENCE

The Securities and Exchange Commission 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 those documents. The information we incorporate by reference is an important part of this prospectus, and later information that we file with the Securities and Exchange Commission will automatically update and supersede some of this information. The documents we incorporate by reference are:

- o the description of our common stock contained in our registration statement on Form 8-A, Commission File No. 0-23336, as filed with the Securities and Exchange Commission on February 2, 1994;
- o our Annual Report on Form 10-K for the year ended December 31, 2002; and
- o our Current Report on Form 8-K filed with the Securities and Exchange Commission on April 4, 2003.

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All reports and other documents that we file with the Commission under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus but before the termination of the offering of the common stock hereunder will also be considered to be incorporated by reference into this prospectus from the date of the filing of these reports and documents, and will supersede the information herein. We undertake to provide without charge to each person who receives a copy of this prospectus, upon written or oral request, a copy of all of the preceding documents that are incorporated by reference (other than exhibits, unless the exhibits are specifically incorporated by reference into these documents). You may request a copy of these materials, at no cost, by telephoning us at the following address:

Electric Fuel Corporation (doing business as Arotech Corporation)
632 Broadway
New York, New York 10012
Attention: Chief Executive Officer
(646) 654-2107

You should rely only on the information in this prospectus and the additional information described under the heading "Where You Can Find More Information." We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely upon it. Neither we nor the selling stockholders are making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information in this prospectus was accurate on the date of the front cover of this prospectus only. Our business, financial condition, results of operations and prospects may have changed since that date.

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12,606,151 Shares
Common Stock

Electric Fuel(R)

PROSPECTUS

, 2003

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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 costs and expenses payable by Electric Fuel in connection with the sale of common stock being registered. All amounts are estimates except the SEC registration fee.

SEC Registration Fee	\$	944.15
Legal Fees and Expenses		15,000.00
Accounting Fees and Expenses		110,000.00
Printing and Engraving		3,500.00
Miscellaneous		555.85
Total:	\$	130,000.00

Item 15. Indemnification of Directors and Officers

Electric Fuel Corporation is a Delaware corporation. Section 102(b)(7) of the Delaware General Corporation Law (the "DGCL") enables a corporation in its original certificate of incorporation or an amendment thereto to eliminate or limit the personal liability of a director to the corporation or its stockholders for monetary damages for violations of the director's fiduciary duty, except (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) pursuant to Section 174 of the DGCL (providing for liability of directors for unlawful payment of dividends or unlawful stock purchases or redemptions) or (iv) for any transaction from which a director derived an improper personal benefit. The Company's Amended and Restated Certificate of Incorporation ("Certificate of Incorporation") and By-Laws contain provisions eliminating the liability of directors to the extent permitted by the DGCL.

Section 145 of the DGCL provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal or investigative (other than an action by or in the right of the corporation) by reason of the fact that he is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding 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, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. Section 145 further provides that a corporation similarly may indemnify any such person serving in any such capacity who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure judgment in its favor, against expenses actually and reasonably incurred in connection with the defense or settlement of such action or suit 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 and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Delaware Court of Chancery or such other court in which such action or suit was brought

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shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Article 10 of the Company's Certificate of Incorporation provides that, to the fullest extent permitted by the DGCL, the Company's directors shall not be liable to the Company or its stockholders for monetary damages for any breach of fiduciary duty as a director.

Article 11 of the Company's Certificate of Incorporation provides that the Company shall, to the maximum extent permitted under the DGCL, indemnify any person who was or is made a

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party or is threatened to be made a party to any threatened, pending or completed action, suit, proceeding or claim, whether civil, criminal, administrative or investigative, by reason of the fact that such person is or was or has agreed to be a director or officer of the Company or while a director or officer is or was serving at the request of the Company as a director, officer, partner, trustee, employee, or agent of any corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorney's fees), judgments, fines, penalties and amounts paid in settlement incurred in connection with the investigation, preparation to defend or defense of such action, suit, proceeding or claim.

The Company also maintains directors' and officers' insurance.

For the undertaking with respect to indemnification, see Item 17 herein.

Item 16. Exhibits

Exhibit Number	Description
-----	-----
(1)3.1	Registrant's Amended and Restated Certificate of Incorporation
(2)3.1.1	Amendment to Registrant's Amended and Restated Certificate of Incorporation
(3)3.2	Amended and Restated By-Laws
(3)4.1	Specimen Certificates for shares of the Registrant's Common Stock, \$.01 par value
+5.1	Legal Opinion of Lowenstein Sandler PC
+23.1	Consent of Kost Forer & Gabbay
+23.2	Consent of Lowenstein Sandler PC (contained in the opinion filed as Exhibit 5.1)
++24.1	Power of Attorney (included as part of the signature page filed herewith)

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- + Filed herewith
- ++ Previously filed
- (1) Incorporated by reference to our Annual Report on Form 10-K for the year ended December 31, 1998
- (2) Incorporated by reference to our Annual Report on Form 10-K for the year ended December 31, 2000
- (3) Incorporated by reference to our Registration Statement on Form S-1 (Registration No. 33-73256), which became effective on February 23, 1994

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 of 1933,

(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 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement,

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(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.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed 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) The undersigned registrant hereby undertakes 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 Section 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

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offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(5) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions set forth in Item 15 above, 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 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.

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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 Amendment No. 5 to its Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of New York, State of New York, on this 15th day of April, 2003.

ELECTRIC FUEL CORPORATION

By: /s/ Robert S. Ehrlich
Name: Robert S. Ehrlich
Title: President, Chairman and
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this registration statement or amendment has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

SIGNATURE

TITLE

/s/ Robert S. Ehrlich

Chairman, President, Chief Executive Officer and Director

Robert S. Ehrlich

(Principal Executive Officer)

/s/ Avihai Shen

Vice President - Finance

Avihai Shen

(Principal Financial Officer)

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/s/ Danny Waldner ----- Danny Waldner * ----- Dr. Jay M. Eastman * ----- Lawrence M. Miller * ----- Jack E. Rosenfeld /s/ Steven Esses ----- Steven Esses ----- Bert W. Wasserman	Controller (Principal Accounting Officer) Director Director Director Director and Executive Vice President and Chief Operating Officer Director
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*
By: /s/ Robert S. Ehrlich

Robert S. Ehrlich
Attorney-in-fact