AMTECH SYSTEMS INC
Form S-1
October 23, 2007

As filed with the Securities and Exchange Commission on October 22, 2007

Registration No. 333-

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

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

AMTECH SYSTEMS, INC.
(Exact name of registrant as specified in its charter)

Arizona	**3559**	**86-0411215**
(State of incorporation)	(Primary Standard Industrial Classification Code No.)	(I.R.S. Employer Identification No.)

131 South Clark Drive
Tempe, Arizona 85281
(480) 967-5146
(Address, including zip code and telephone number, including area code of registrant's principal executive offices)

Bradley C. Anderson
Vice President – Finance, Chief Financial Officer
Amtech Systems, Inc.
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(480) 967-5146
(Name, address, including zip code and telephone number, including area code, of agent for service)

with copies to:

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

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

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. o

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

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

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price (1)(2)	Amount of Registration Fee
Common Stock, par value $0.01 per share	$34,500,000	$1,059

(1) Includes shares of common stock that may be purchased by the underwriter to cover over-allotments, if any.

(2) Estimated solely for the purpose of calculating the amount of the registration fee, pursuant to Rule 457(o) under the Securities Act of 1933, as amended.

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.

Subject to completion dated , 2007

Preliminary Prospectus

Shares of Common Stock
$ Per Share

We are selling shares of our common stock.

Our common stock trades on the NASDAQ Global Market under the symbol ASYS. On October 18, 2007 the last sale price of our common stock as reported on the NASDAQ Global Market was $15.60 per share.

We have granted the underwriters the right to purchase up to an additional shares of common stock solely to cover over-allotments of shares.

Investing in our common stock involves a high degree of risk.
See "Risk Factors" beginning on page 10.

	Per Share	Total	Total if over-allotment option is exercised
Public offering price	$	$	$
Underwriting discount and commissions	$	$	$
Proceeds, to us (before expenses)	$	$	$

The underwriter expects to deliver the shares to purchasers on or about , 2007.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

COLLINS STEWART LLC

The date of this prospectus is , 2007.

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PROSPECTUS SUMMARY

This summary highlights selected information from this prospectus and does not contain all of the information that you need to consider in making your investment decision. You should read the entire prospectus, including the risks of investing discussed under "Risk Factors" beginning on page 10 and the following summary together with the more detailed information regarding our company, the shares, our financial statements and the notes to those statements and the exhibits to the registration statement of which this prospectus is a part.

References in this prospectus to "Amtech," the "Company," "we," "us," and "our," refer to Amtech Systems, Inc. and subsidiaries, unless otherwise specified.

OUR COMPANY

We are a leading supplier of horizontal diffusion furnace systems used for solar (photovoltaic) cell and semiconductor manufacturing, and are recognized in the markets we serve for our technology and our brands. We operate in two business segments: (i) semiconductor and solar equipment and (ii) polishing supplies. Our semiconductor and solar equipment is sold under the well-known and respected brand names of Tempress® Systems and Bruce Technologies™, which have customers in both the semiconductor industry and the solar industry. Within the semiconductor industry, we provide equipment to manufacturers of analog, power, automotive and microcontroller chips with geometries greater than 0.3 micron, denoted as µ, a strategy we believe minimizes direct competition with significantly larger suppliers of semiconductor equipment. Within the solar industry, we provide diffusion and automation equipment to solar cell manufacturers. Under the PR Hoffman® brand, we believe we are also a leading supplier of insert carriers to manufacturers of silicon wafers, and we provide lapping and polishing consumable products as well as equipment used in various industries.

We have been providing manufacturing solutions to the semiconductor industry for over 30 years, and are leveraging our semiconductor technology and industry presence in an effort to capitalize on growth opportunities in the solar industry. Our customers use our furnaces to manufacture semiconductors, solar cells, silicon wafers and microelectromechanical systems, or MEMS, which are used in end markets such as telecommunications, consumer electronics, computers, automotive, hand-held devices and solar industry products. To complement our research and development efforts, we also sell our furnaces to research institutes and universities.

For the nine months ended June 30, 2007, we recognized net revenue of $32.9 million, which included $8.1 million of solar revenue or approximately 25% of our total revenues. These results compare to $29.2 million of net revenue for the nine months ended June 30, 2006, which included $2.3 million of solar revenues or approximately 7% of our total revenues. Our order backlog as of June 30, 2007 and 2006 was $20.7 million and $13.5 million,

respectively, a 53% increase. Our backlog as of June 30, 2007 included approximately $11.5 million of orders from our solar industry customers compared to $3.1 million of orders from our solar industry customers as of June 30, 2006. Because our orders are typically subject to cancellation or delay by the customer, our backlog at any particular point in time is not necessarily representative of actual sales in subsequent periods, nor is backlog any assurance that we will realize revenue or profit from completing these orders.

Orders from the solar industry, which consist of backlog and shipped orders, totaled $21.4 million during fiscal 2007, compared to $8.0 million and $3.8 million in fiscal 2006 and 2005, respectively.

Amtech Systems, Inc.
Solar Orders Growth
(in millions)

RECENT DEVELOPMENTS

Acquisition of Solar Cell Automation Technology. On October 8, 2007, through our wholly-owned subsidiary, Tempress Holding B.V., we acquired R2D Ingenierie, or R2D, a solar cell and semiconductor automation equipment manufacturing company, located in Montpellier, France. R2D has provided solutions to the solar and semiconductor industries since 1989 and recognized net revenue of $4.9 million in 2006. The automation products sold by R2D are used in several steps of the semiconductor manufacturing processes and for the solar diffusion process. We believe R2D's automation know-how provides a significant point of differentiation from our competitors and provides us the capability to expand the automation solutions we are able to provide to our current and future solar industry customers. We believe the acquisition of the technology and business of R2D enhances our growth strategy by allowing us to increase our sales by offering an integrated system under the Tempress brand to the solar industry.

Under the agreement, we acquired all of the outstanding shares of R2D for a total purchase price of approximately $6.1 million and made a working capital infusion of $1.0 million that was used to satisfy certain outstanding obligations. The purchase price includes significant contingent incentive provisions tied to R2D's successful product improvements, production and technology delivery. Additionally, R2D's key personnel have signed three-year employment agreements.

Partnering to Develop and Market an Antireflective Coating System for Solar Cells. In April 2007, we entered into a licensing and manufacturing agreement to develop and market an antireflective coating system for solar cells with PST Co., LTD., a South Korean producer of vertical thermal processing systems for high-end memory-chip semiconductor applications. This plasma enhanced chemical vapor deposition, or PECVD, system is used in high-volume solar cell manufacturing, and is an important step in the solar cell manufacturing process, as is our diffusion process. The licensing agreement allows us to market PST's existing and future PECVD systems to high-volume solar cell manufacturers throughout the term of the agreement, which we believe will enable us to develop new customer relationships. The royalty free, 10-year licensing agreement will enable us to sell this product to our solar customer base through our extensive global sales and marketing network on an exclusive basis, with the exception of sales in Korea and to one existing Japanese customer of PST, for which PST retains exclusive rights.

Expansion of Solar Manufacturing Plant Capacity. In March 2007, we acquired a 48,000 square foot manufacturing plant located in Vaassen, The Netherlands, near our existing plant where we currently manufacture the majority of our solar cell equipment. This facility, which will replace our current facility, significantly increases our European manufacturing capacity, and we believe it will improve the operating efficiencies of both our solar cell and semiconductor equipment manufacturing in fiscal 2008.

Penetration of the Asia-Pacific Market. We have continued to increase our sales into the Asia-Pacific market and we expect further growth in export opportunities to this region. In the nine months ended June 30, 2007, our sales into the Asia-Pacific market increased by 23% compared to the same period in 2006, driven primarily by sales to our solar industry customers. The Asia-Pacific region continues to be an important and expanding market for us because of the continued migration of solar cell and semiconductor manufacturing to countries in that market.

Partnering to Manufacture Advanced Vertical Microwave System. In May 2007, we entered into a manufacturing agreement with DSG Technologies, a California-based developer of low temperature, microwave heating and curing systems used in fabricating integrated circuits. Under this agreement we expect to manufacture a vertical microwave reactor system that utilizes both our small-batch vertical furnace platform and DSG's microwave heating technology. This new product is designed to be used for the curing processes on advanced sub-50nm semiconductor devices.

SOLAR AND SEMICONDUCTOR INDUSTRIES

We provide products and services primarily to two industries: the solar industry and the semiconductor industry.

Solar Industry

Worldwide Demand For Solar Energy (Total Solar Cell Production)

Solar power has emerged as one of the most rapidly growing renewable energy sources. To date, various technologies have been developed to harness solar energy. The most significant technology is the use of interconnected photovoltaic, or PV, cells to generate electricity directly from sunlight. Most PV cells are constructed using specially processed silicon, which, when exposed to sunlight, generates direct current electricity. Solar energy has many advantages over other existing renewable energy sources and traditional non-renewable energy sources in the areas of environmental impact, delivery risk, distributed nature of generation and matching of peak generation with demand. According to *PHOTON International* published by Solar Verlag GmbH, an independent solar energy research publication, the global PV market, as measured by total PV cell production, increased from 1.2 gigawatts, or GW, in 2004 to 2.6 GW in 2006, which represents a compound annual growth rate, or CAGR, of approximately 36%. During the same period, PV industry revenues grew from approximately $8.0 billion to approximately $20.0 billion. *PHOTON International* projects that total PV cell production, including thin-film and non-conventional production which our products do not address, will increase from 4.0GW in 2007 to 20.5GW in 2011, representing a CAGR of approximately 50%. During the same period, PV industry revenues are projected to grow from approximately $30 billion to approximately $121 billion.

Despite this rapid growth, solar energy currently accounts for only a small fraction of the world's energy output. We believe that growth in the PV industry will be driven by rising energy demand, the increasing scarcity of traditional energy resources coupled with rising prices, the growing adoption of government incentives for solar energy due

to increasing environmental awareness and concern about energy independence, the gradually decreasing cost of solar energy and the changing consumer preferences toward renewable energy sources. We believe the anticipated continued growth of the PV industry will result in increased investment in PV manufacturing equipment.

Semiconductor Industry

The semiconductor industry has experienced significant yet cyclical growth since the early 1990s. This growth has been primarily attributable to an increase in demand for personal computers, the growth of the Internet, the expansion of the telecommunications industry, especially wireless communications, and the emergence of new applications in consumer electronics. Further fueling this growth is the rapidly expanding end-user demand for smaller, less-expensive and better-performing electronic products, as well as for traditional products with more intelligence. This growing demand has led to an increased number of semiconductor devices in electronic and other consumer products, including automobiles. The cyclical nature of the market is characterized by short-term periods of under- or over-supply for most semiconductors, including microprocessors, memory, power management chips and other logic devices.

COMPETITIVE STRENGTHS

We believe that we are a leader in the markets we serve as a result of the following competitive strengths:

Leading Market Share and Recognized Brand Names. The Tempress, Bruce Technologies and PR Hoffman brands have long been recognized in our industry and identified with high-quality products, innovative solutions and dependable service. We believe that our brand recognition and experience will continue to allow us to capitalize on current and future market opportunities in the solar industry.

We have been providing horizontal diffusion furnaces and polishing supplies and equipment to our customers for over 30 years. We have sold and installed over 900 horizontal furnaces worldwide and benefit from what we believe to be the largest installed customer base in the semiconductor industry, which we believe offers an opportunity for replacement and expansion demand. Customers that have purchased our furnaces can leverage their investment in training, spare parts inventory and other costs by acquiring additional equipment from us. We also have an extensive retrofit, parts and service business, which typically generates higher margins than our equipment business.

Experienced Management Team. We are led by a highly experienced management team. Our CEO has over 34 years of industry experience, including 26 years with our company. Our four general managers have an average of over 20 years of semiconductor and solar industry experience and an average of 18 years with our company (including our predecessor companies).

Established, Diversified Customer Base. We have long-standing relationships with many of our top customers, which we believe remain strong. We maintain a broad base of customers, including leading solar cell manufacturing companies, as well as semiconductor and wafer manufacturing companies. During the nine months ended June 30, 2007, our largest customer accounted for approximately 12% of our net revenue and our top 10 customers collectively represented approximately 52% of our net revenue. In fiscal 2006, our largest customer accounted for approximately 17% of our net revenue, and our top 10 customers collectively represented approximately 58% of our net revenue. In fiscal 2005, no single customer accounted for more than 10% of our net revenue. Our largest customer has been different in each of the last three fiscal years.

Proven Acquisition Track Record. Over the last twelve years, we have developed an acquisition program that has resulted in the acquisition of four significant businesses.

In October 2007, we acquired R2D Ingenierie, a solar and semiconductor automation company located in Montpellier, France. We believe the acquisition of the technology and business of R2D enhances our growth strategy by allowing us to increase our sales by offering an integrated system under the Tempress brand to the solar industry.

In July 2004, we acquired the Bruce Technologies line of semiconductor horizontal furnace operations, product lines and other assets from Kokusai Semiconductor Equipment Corporation, or Kokusai, a wholly owned subsidiary of Hitachi, Japan and its affiliate, Kokusai Electric Europe, GmbH.

In July 1997, we acquired substantially all of the assets of P.R. Hoffman Machine Products, Inc., or PR Hoffman. This acquisition enabled us to offer new products, including lapping and polishing carriers, polishing templates, lapping and polishing machines and related consumable and spare parts, to our existing customer base as well as to new customers.

In 1994, we acquired certain assets of Tempress Systems, Inc., or Tempress, and hired Tempress's engineers to develop our first models of the Tempress horizontal diffusion furnaces for production in The Netherlands.

Technical Expertise. We have highly trained and experienced mechanical, chemical, environmental, electronic, hardware and software engineers and support personnel. Our engineering group possesses core competencies in product applications and support systems, automation, sophisticated controls, chemical vapor deposition, diffusion and pyrogenic processes, robotics, vacuum systems, ultra clean applications and software driven control packages. We believe this expertise enables us to design, develop and deliver high-quality, technically-advanced integrated product solutions for solar cell and semiconductor manufacturing customers.

Leading Technology Solutions and New Product Development. We pursue a partnering-based approach, in which our engineering and development teams work closely with our customers to ensure our products are tailored to meet our customers' specific requirements. We believe this approach enables us to more closely align ourselves with our customers and to provide them with superior systems.

We believe our line of horizontal diffusion furnaces, which allow high wafer-per-hour throughput, is more technologically advanced and reliable than most of our competitors' equipment. In addition, the processing and temperature control systems within the furnace provide diverse and proven process capabilities, which enable the application of high-quality films onto silicon wafers. We believe our recently acquired R2D solar automation technology will provide efficiencies in the manufacturing process that will allow our customers to be more competitive in their respective markets.

We developed a small batch vertical furnace jointly with a major European customer and are currently developing five different thin film processes for use with this furnace. We retain full ownership of this technology. We shipped two of these systems in fiscal 2005 and one in fiscal 2006. In addition, in 2007, we shipped a small batch vertical furnace utilizing DSG's microwave technology to DSG.

In 2007, we also began selling precision thickness wafer carriers. This is an internally developed product that we expect will increase our sales to the wafer carrier market.

Geographically Diverse Customer Base. We believe that our geographically diverse revenue stream helps to minimize our exposure to fluctuations in any one market, and to maximize our access to potential customers relative to our competitors with geographically concentrated operations. The geographic distribution of our net revenues from fiscal 2004 through the nine months ended June 30, 2007 is as follows:

	Fiscal year Ended September 30,			Nine Months Ended June 30,
	2004	**2005**	**2006**	**2007**
Asia Pacific	33%	36%	41%	48%
North America	36%	40%	35%	29%
Europe	31%	24%	24%	23%

GROWTH STRATEGY

We intend to leverage our competitive strengths through a combination of internal and external growth strategies.

Internal Growth. Our strategy for internal growth includes: capitalizing on growth opportunities in the solar industry and the Asia-Pacific market; accelerating new product and technology development; enhancing our sales and marketing capabilities; and leveraging our installed base.

Capitalizing on Growth Opportunities in the Solar Industry. We have had recent success in increasing our sales to the solar industry. Our fiscal 2007 solar orders, which consist of backlog and shipped orders, totaled $21.4 million, compared to $8.0 million and $3.8 million in fiscal 2006 and 2005, respectively. We believe the increase in

orders from solar cell manufacturers is due to our focused product development and marketing efforts, as well as to growing overall demand from the solar industry. We believe that growth in the solar industry will be driven by rising energy demand, the increasing scarcity of traditional energy resources coupled with rising prices, the growing adoption of government incentives for solar energy due to increasing environmental awareness and concern about energy independence, the gradually decreasing cost of solar energy and the changing consumer preferences toward renewable energy sources.

Capitalizing on Growth Opportunities in the Asia-Pacific Market. With our extensive global knowledge and experience, particularly in Asia, we intend to further leverage our established sales channels in the Asia-Pacific market for current and future products. The Asia-Pacific region continues to be an important and expanding market for us, particularly because of the continuing migration of solar cell and semiconductor manufacturing to countries in that region. According to Solar Plaza, total solar cell production in China is expected to grow from 600 MWp in 2005 to 2,200 MWp in 2010 for a CAGR of 30%. For the nine months ended June 30, 2007, we have increased our sales into the Asia-Pacific market by 23% compared to the same period in 2006. This increase is primarily driven by solar equipment sales.

Accelerating New Product and Technology Development. We are focused on developing new products across our business in response to customer needs in various markets.

Small Batch Vertical Furnace. At $1.5 billion annually, the vertical furnace market is much larger than the horizontal furnace market that we have served historically. Our entry product into the vertical furnace market is a two-tube small batch vertical furnace for wafer sizes of up to 200mm, with each tube having a small flat zone capable of processing 25-50 wafers per run. We are targeting small batch niche applications in the vertical furnace market first, since the competition in the large batch vertical furnace market is intense and our competitors are much larger and have substantially greater financial resources, processing knowledge and advanced technology. We believe our large installed customer base increases the market to which we can sell our small batch vertical furnaces and other new products.

Precision Thickness Wafer Carrier. Wafer carriers are work holders into which silicon wafers or other materials are inserted for the purpose of holding them securely in place during the lapping and polishing processes. Many customers thin their wafer carriers to precise tolerances to meet their various applications. We internally developed and began selling precision thickness wafer carriers in 2007.

Enhancing our Sales and Marketing Capabilities. In order to increase sales and improve customer service globally, we intend to continue integrating our Bruce Technologies and Tempress sales and marketing teams and transitioning them from being product oriented to being regionally focused. We also intend to hire additional senior management to expand our existing solar sales and marketing efforts.

Leveraging our Installed Base. We intend to continue leveraging our relationships with our customers to maximize parts, system, service and retrofit revenue from the large installed base of Bruce Technologies and Tempress brand horizontal diffusion furnaces. We intend to accomplish this by meeting these customers needs for replacement systems and additional capacity, including equipment and services in connection with any of our customers relocation to, or expansion efforts in, Asia.

External Growth. We intend to selectively seek strategic growth opportunities through acquisitions, joint ventures, geographic expansion and the development of additional manufacturing capacity.

Pursuing Strategic Acquisitions that Complement our Strong Platform. Over the last twelve years, we have developed an acquisition program and have completed the acquisition of four significant businesses.

Based on a disciplined acquisition strategy, we continue to evaluate potential technology, product and business acquisitions or joint ventures that are intended to increase our existing market share in the solar industry and expand the number of front-end semiconductor processes addressed by our products. In evaluating these opportunities, our objectives include: enhancing our earnings and cash flows, adding complementary product offerings, expanding our geographic footprint, improving our production efficiency and growing our customer base.

THE OFFERING

Common Stock Offered by the Company	shares
Common Stock Outstanding after this Offering	shares (1)
Use of Proceeds	We intend to use the net proceeds from this offering for working capital and other general corporate purposes. See Use of Proceeds, beginning on page 20.
Risk Factors	You should carefully consider all of the information contained in this prospectus, and in particular, you should evaluate the specific risks set forth under Risk Factors, beginning on page 10.
NASDAQ Global Market Symbol	ASYS

(1) The number of shares assumes that the underwriter will exercise the over-allotment option granted to it by us. The number of shares outstanding as of September 30, 2007 does not include 450,553 shares of common stock reserved for issuance upon exercise of options outstanding under our stock options plans.

CORPORATE INFORMATION

Amtech was incorporated in Arizona in October 1981 under the name Quartz Engineering & Materials, Inc. We changed to our present name in 1987. We conduct operations through four wholly-owned subsidiaries: Tempress Systems, Inc., a Texas corporation with all of its operations in The Netherlands, also referred to herein as Tempress Systems or Tempress, acquired in 1994; P.R. Hoffman Machine Products, Inc., an Arizona corporation based in Carlisle, Pennsylvania, or PR Hoffman, acquired in July 1997; Bruce Technologies, Inc., a Massachusetts corporation based in Billerica, Massachusetts, or Bruce Technologies, acquired in July 2004; and R2D Ingenierie SAS, or R2D, French corporation located in Montpellier, France, acquired in October 2007.

Our principal executive offices are located at 131 South Clark Drive, Tempe, Arizona, 85281, and our telephone number is (480) 967-5146. Our website is located at www.amtechsytems.com. The information contained in, or that can be accessed through, our website is not part of this prospectus.

Tempress, Atmoscan, and PR Hoffman are our federally registered trademarks. Other trademarks used in this prospectus are the property of their respective owners.

SUMMARY CONSOLIDATED FINANCIAL DATA

We derived the consolidated operating data for the fiscal years ended September 30, 2004, 2005 and 2006 from our audited consolidated financial statements included elsewhere in this prospectus. The selected historical consolidated financial data for the nine months ended June 30, 2006 and June 30, 2007 were derived from our unaudited historical consolidated financial statements included elsewhere in this prospectus. We derived the consolidated balance sheet data as of June 30, 2007 from our unaudited consolidated financial statements included elsewhere in this prospectus. The summary pro forma financial information for the nine months ended June 30, 2007 was derived from our unaudited historical condensed consolidated financial statements and the unaudited historical financial statements of R2D included elsewhere in this prospectus.

The following selected financial data should be read in conjunction with the section of this prospectus entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations," our consolidated financial statements (including the related notes thereto), the financial statements of R2D (including the related notes thereto) and the unaudited pro forma financial statements included elsewhere in this prospectus.

	Years Ended September 30,			Nine Months Ended June 30,		
	2004	2005	2006	2006	2007	2007 Pro forma[1]
		(Audited)			(Unaudited)	
	(In thousands, except percentages and per share amounts)					
Operating Data:						
Net revenues	$ 19,299	$ 27,899	$ 40,445	$ 29,157	$ 32,864	$ 36,390
Gross profit	$ 3,949	$ 7,668	$ 10,575	$ 7,917	$ 8,684	$ 9,919
Gross profit %	20.5%	27.5%	26.1%	27.2%	26.4%	27.3%
Operating income (loss)	$ (2,035)	$ (244)	$ 1,635	$ 1,106	$ 972	$ 1,186
Net income (loss)	$ (3,165)	$ (259)	$ 1,318	$ 822	$ 1,278	$ 1,257
Dividends on convertible preferred stock	$	$ (76)	$ (81)	$	$	$
Net income (loss) attributable to common	$ (3,165)	$ (335)	$ 1,237	$ 822	$ 1,278	$ 1,257
Earnings (loss) per share:						
Basic earnings (loss) per share	$ (1.17)	$ (0.12)	$ 0.40	$ 0.25	$ 0.25	$ 0.25
Diluted earnings (loss) per share	$ (1.17)	$ (0.12)	$ 0.38	$ 0.24	$ 0.25	$ 0.25

(1) The pro forma data gives effect to the acquisition of R2D as though it had occurred on October 1, 2006.

The following table contains a summary of our balance sheet at June 30, 2007.

	June 30, 2007

	2007	Pro forma[1]
	(Unaudited) (Dollars in thousands)	
Balance Sheet Data:		
Cash and cash equivalents	$ 17,872	$ 43,109
Working capital	$ 29,721	$ 56,569
Current ratio	4.1:1	6.1:1
Total assets	$ 46,993	$ 80,633
Total current liabilities	$ 9,539	$ 11,169
Long-term obligations	$ 774	$ 854
Total stockholders equity	$ 36,680	$ 68,610

(1) The pro forma balance sheet data gives effect to the acquisition of R2D as though it had occurred on June 30, 2007 and the receipt of net proceeds of approximately $34.5 million from the sale of shares of common stock offered by us in this public offering (and assumes that the underwriters will exercise the over-allotment option granted to them by us), after deducting the underwriting discount and estimated offering expenses payable by us.

RISK FACTORS

Before you invest in the securities offered pursuant to this prospectus, you should be aware that there are various related investment risks, including those described below. You should consider carefully these risk factors together with all of the other information included in this prospectus, and the exhibits to this prospectus.

If any of the following risks actually occur, our business, financial condition, results of operations or prospects could be materially and adversely affected. In such case, the trading price of our common stock could decline and you could lose part or all of your investment.

Risks Related to our Business and Industry.

If demand declines for horizontal diffusion furnaces and related equipment, or for solar industry products, our financial position and results of operations could be materially and adversely affected.

The revenue of our semiconductor equipment segment, which accounted for approximately 82% of our consolidated net revenue as of September 30, 2007, is comprised primarily of sales of horizontal diffusion furnaces and our automation products. Our automation products are useable only with horizontal diffusion furnaces. There is a trend in the semiconductor industry, related to the trend to produce smaller chips on larger wafers, towards the use in semiconductor manufacturing facilities of newer technology, such as vertical diffusion furnaces. Vertical diffusion furnaces are more efficient than the horizontal diffusion furnaces in certain manufacturing processes for smaller chips on larger wafers. As early as 1994, we had expected that demand for our horizontal diffusion furnaces would decline as a result of this trend. We believe this trend has not yet adversely affected us to the extent originally expected. However, to the extent that the trend to use vertical diffusion furnaces over horizontal diffusion furnaces continues, our revenue may decline and our corresponding ability to generate income may be adversely affected.

A significant part of our growth strategy involves expanding our sales to the solar industry. The solar industry is subject to risks relating to industry shortages of polysilicon, (which we discuss further below), the continuation of government incentives, the availability of specialized capital equipment, global energy prices and rapidly changing technologies offering alternative energy sources. If the demand for solar industry products declines, the demand by the solar industry for our products would also decline and our financial position and results of operations would be harmed.

We may not be able to increase or sustain our recent growth rate, and we may not be able to manage our future growth effectively.

We may be unable to continue to expand our business or manage future growth. Our recent expansion has placed, and our planned expansion and any other future expansion will continue to place, a significant strain on our management, personnel, systems and resources. We have recently purchased additional equipment and real estate to significantly expand our manufacturing capacity and expect to hire additional employees to support an increase in manufacturing, research and development and sales and marketing efforts. To successfully manage our growth, we believe we must effectively:

- hire, train, integrate and manage additional field service engineers, sales and marketing personnel, and financial and information technology personnel;
- retain key management and augment our management team, particularly if we lose key members;
- continue to enhance our customer resource management and manufacturing management systems;
- implement and improve additional and existing administrative, financial and operations systems, procedures and controls;
- expand and upgrade our technological capabilities; and
- manage multiple relationships with our customers, suppliers and other third parties.

We may encounter difficulties in effectively managing the budgeting, forecasting and other process control issues presented by rapid growth. If we are unable to manage our growth effectively, we may not be able to take advantage of market opportunities, develop new solar cells and other products, satisfy customer requirements, execute our business plan or respond to competitive pressures.

The ongoing volatility of the semiconductor equipment industry may negatively impact our business and results of operations and our corresponding ability to efficiently budget our expenses.

The semiconductor equipment industry is highly cyclical. As such, demand for and the profitability of our products can change significantly from period to period as a result of numerous factors, including, but not limited to, changes in:

- global and regional economic conditions;
- changes in capacity utilization and production volume of manufacturers of semiconductors, silicon wafers, solar cells and MEMS;
- the shift of semiconductor production to Asia, where there often is increased price competition; and
- the profitability and capital resources of those manufacturers.

For these and other reasons, our results of operations for past periods may not necessarily be indicative of future operating results.

Since our business has historically been subject to cyclical industry conditions, we have experienced significant fluctuations in our quarterly new orders and net revenue, both within and across years. Demand for semiconductor and silicon wafer manufacturing equipment and related consumable products has also been volatile as a result of sudden changes in semiconductor supply and demand and other factors in both semiconductor devices and wafer fabrication processes. Our orders tend to be more volatile than our revenue, as any change in demand is reflected immediately in orders booked, which are net of cancellations, while revenue tends to be recognized over multiple quarters as a result of procurement and production lead times and the deferral of certain revenue under our revenue recognition policies. Customer delivery schedules on large system

orders can also add to this volatility since we generally recognize revenue for new product sales on the date of customer acceptance or the date the contractual customer acceptance provisions lapse. As a result, the fiscal period in which we are able to recognize new products revenue is typically subject to the length of time that our customers require to evaluate the performance of our equipment after shipment and installation, which could cause our quarterly operating results to fluctuate.

The purchasing decisions of our customers are highly dependent on the economies of both their domestic markets and the worldwide semiconductor industry. The timing, length and severity of the up-and-down cycles in the semiconductor equipment industry are difficult to predict. The cyclical nature of our marketplace affects our ability to accurately budget our expense levels, which are based in part on our projections of future revenue.

When cyclical fluctuations result in lower than expected revenue levels, operating results may be adversely affected and cost reduction measures may be necessary in order for us to remain competitive and financially sound. During a down cycle, we must be able to make timely adjustments to our cost and expense structure to correspond to the prevailing market conditions. In addition, during periods of rapid growth, we must be able to increase manufacturing capacity and personnel to meet customer demand, which may require additional liquidity. We can provide no assurance that these objectives can be met in a timely manner in response to changes within the industry cycles. If we fail to respond to these cyclical changes, our business could be seriously harmed.

During the most recent down cycle, beginning in the first half of 2001, the semiconductor industry experienced excess production capacity that caused semiconductor manufacturers to decrease capital spending. We do not have long-term volume production contracts with our customers and we do not control the timing or volume of orders placed by our customers. Whether and to what extent our customers place orders for any specific products and the mix and quantities of products included in those orders are factors beyond our control. Insufficient orders would result in under-utilization of our manufacturing facilities and infrastructure and will negatively affect our financial position and results of operations.

The semiconductor equipment industry is competitive and we are relatively small in size and have fewer resources in comparison with our competitors.

Our industry includes large manufacturers with substantial resources to support customers worldwide. Our future performance depends, in part, upon our ability to continue to compete successfully worldwide. Some of our competitors are diversified companies having substantially greater financial resources and more extensive research, engineering, manufacturing, marketing and customer service and support capabilities than we can provide. We face

competition from companies whose strategy is to provide a broad array of products, some of which compete with the products and services that we offer. These competitors may bundle their products in a manner that may discourage customers from purchasing our products. In addition, we face competition from smaller emerging semiconductor equipment companies whose strategy is to provide a portion of the products and services that we offer at often a lower price than ours, using innovative technology to sell products into specialized markets. Loss of competitive position could impair our prices, customer orders, revenue, gross margin and market share, any of which would negatively affect our financial position and results of operations. Our failure to compete successfully with these other companies would seriously harm our business. There is a risk that larger, better-financed competitors will develop and market more advanced products than those that we currently offer, or that competitors with greater financial resources may decrease prices thereby putting us under financial pressure. The occurrence of any of these events could have a negative impact on our revenue.

We are dependent on key personnel for our business and product development and sales, and any loss of our key personnel to competitors or other industries could dramatically impact our ability to continue operations.

Historically, our product development has been accomplished through cooperative efforts with key customers. Our relationship with some customers is substantially dependent on personal relations established by our President and Chief Executive Officer. Furthermore, our relationship with a major European customer that has been instrumental in the development of our small batch vertical furnace is substantially dependent upon our European General Manager. We are also dependent upon our Technical Director of R2D for the development of

our automation technology. While there can be no assurance that such relationships will continue, such cooperation is expected to continue to be a significant element in our future development efforts thereby continuing our reliance on certain of our key personnel.

We are the beneficiary of life insurance policies on the life of our President and Chief Executive Officer, Mr. J. S. Whang, in the amount of $2,000,000, but there is no assurance that such amount will be sufficient to cover the cost of finding and hiring a suitable replacement for Mr. Whang. It may not be feasible for any successor to maintain the same business relationships that Mr. Whang has established. If we were to lose the services of Mr. Whang for any reason, it could have a material adverse affect on our business.

We also depend on the management efforts of our officers and other key personnel and on our ability to attract and retain key personnel. During times of strong economic growth, competition is intense for highly skilled employees. There can be no assurance that we will be successful in attracting and retaining such personnel or that we can avoid increased costs in order to do so. There can be no assurance that employees will not leave Amtech or compete against us. Our failure to attract additional qualified employees, or to retain the services of key personnel, could negatively impact our financial position and results of operations.

We may not be able to keep pace with the rapid change in the technology we use in our products.

Success in the semiconductor equipment industry depends, in part, on continual improvement of existing technologies and rapid innovation of new solutions. For example, the semiconductor industry continues to shrink the size of semiconductor devices. These and other evolving customer needs require us to respond with continued development programs.

Technical innovations are inherently complex and require long development cycles and appropriate professional staffing. Our future business success depends on our ability to develop and introduce new products, or new uses for existing products, that successfully address changing customer needs, win market acceptance of these new products or uses and manufacture any new products in a timely and cost-effective manner. If we do not develop and introduce new products, technologies or uses for existing products in a timely manner and continually find ways of reducing the cost to produce them in response to changing market conditions or customer requirements, our business could be seriously harmed.

Acquisitions can result in an increase in our operating costs, divert management s attention away from other operational matters and expose us to other risks associated with acquisitions.

We continually evaluate potential acquisitions and consider acquisitions an important part of our future growth strategy. In the past, we have made acquisitions of, or significant investments in, other businesses with synergistic products, services and technologies and plan to continue to do so in the future. Acquisitions, including our recent acquisition of R2D, involve numerous risks, including, but not limited to:

- difficulties and increased costs in connection with integration of geographically diverse personnel, operations, technologies and products of acquired companies;
- diversion of management s attention from other operational matters;
- the potential loss of key employees of acquired companies;
- lack of synergy, or inability to realize expected synergies, resulting from the acquisition;
- the risk that the issuance of our common stock, if any, in an acquisition or merger could be dilutive to our shareholders, if anticipated synergies are not realized; and
- acquired assets becoming impaired as a result of technological advancements or worse-than-expected performance of the acquired company.

Our financial position and results of operations may be materially harmed if we are unable to recoup our investment in research and development.

The rapid change in technology in our industry requires that we continue to make investments in research and development in order to enhance the performance and functionality of our products, to keep pace with competitive products and to satisfy customer demands for improved performance, features and functionality. There can be no assurance that revenue from future products or enhancements will be sufficient to recover the development costs associated with such products or enhancements, or that we will be able to secure the financial resources necessary to fund future development. Research and development costs are typically incurred before we confirm the technical feasibility and commercial viability of a product, and not all development activities result in commercially viable products. In addition, we cannot ensure that products or enhancements will receive market acceptance, or that we will be able to sell these products at prices that are favorable to us. Our business could be seriously harmed if we are unable to sell our products at favorable prices, or if our products are not accepted by the markets in which we operate.

If third parties violate our proprietary rights, in which we have made significant investments, such events could result in a loss of value of some of our intellectual property or costly litigation.

Our success is dependent in part on our technology and other proprietary rights. We own various United States and international patents and have additional pending patent applications relating to some of our products and technologies. The process of seeking patent protection is lengthy and expensive, and we cannot be certain that pending or future applications will actually result in issued patents, or that issued patents will be of sufficient scope or strength to provide meaningful protection or commercial advantage to us. Other companies and individuals, including our larger competitors, may develop technologies that are similar or superior to our technology or design around the patents we own or license. We also maintain trademarks on certain of our products and claim copyright protection for certain proprietary software and documentation. However, we can give no assurance that our trademarks and copyrights will be upheld or successfully deter infringement by third parties. Recently, the patent covering technology that we license and use in our manufacture of insert carriers has expired, which may have the effect of diminishing or eliminating any competitive advantage we may have with respect to this manufacturing process.

While patent, copyright and trademark protection for our intellectual property is important, we believe our future success in highly dynamic markets is most dependent upon the technical competence and creative skills of our personnel. We attempt to protect our trade secrets and other proprietary information through confidentiality agreements with our customers, suppliers, employees and consultants and through other security measures. We also maintain exclusive and non-exclusive licenses with third parties for the technology used in certain products. However,

these employees, consultants and third parties may breach these agreements, and we may not have adequate remedies for wrongdoing. In addition, the laws of certain territories in which we develop, manufacture or sell our products may not protect our intellectual property rights to the same extent as do the laws of the United States.

We may face intellectual property infringement claims that could be time-consuming and costly to defend and could result in our loss of significant rights and the assessment of treble damages.

From time to time, we have received communications from other parties asserting the existence of patent rights or other intellectual property rights that they believe cover certain of our products, processes, technologies or information. In such cases, we evaluate our position and consider the available alternatives, which may include seeking licenses to use the technology in question on commercially reasonable terms or defending our position. We cannot ensure that licenses can be obtained, or if obtained will be on acceptable terms, or that litigation or other administrative proceedings will not occur.

Some of these claims may lead to litigation. We cannot assure you that we will prevail in these actions, or that other actions alleging misappropriation or misuse by us of third-party trade secrets, infringement by us of third-party patents and trademarks or the validity of our patents, will not be asserted or prosecuted against us. Intellectual property litigation, regardless of outcome, is expensive and time-consuming, could divert management□s attention from our business and have a material negative effect on our business, operating results

or financial condition. If there is a successful claim of infringement against us, we may be required to pay substantial damages (including treble damages if we were to be found to have willfully infringed a third party's patent) to the party claiming infringement, develop non-infringing technology, stop selling or using technology that contains the allegedly infringing intellectual property or enter into royalty or license agreements that may not be available on acceptable or commercially practical terms, if at all. Our failure to develop non-infringing technologies or license the proprietary rights on a timely basis could harm our business. Parties making infringement claims on future issued patents may be able to obtain an injunction that would prevent us from selling or using our technology that contains the allegedly infringing intellectual property, which could harm our business.

Our reliance on sales to a few major customers and granting credit to those customers places us at financial risk.

As of June 30, 2007, accounts receivable from two customers each exceeded 10% of accounts receivable; one customer accounted for 14% and the other customer accounted for 12% of total accounts receivable. A concentration of our receivables from one or a small number of customers places us at risk. The loss of sales to any of these customers would have a significant negative impact on our business. Our agreements with these customers may be cancelled if we fail to meet certain product specifications or materially breach the agreement or in the event of bankruptcy, and our customers may seek to renegotiate the terms of current agreements or renewals. If any one or more of our major customers is unable to pay us it could adversely affect our financial position and results of operations. We attempt to manage this credit risk by performing credit checks, by requiring significant partial payments prior to shipment where appropriate and by actively monitoring collections. We also require letters of credit of certain customers depending on the size of the order, type of customer or its creditworthiness and its country of domicile.

We currently sell to a relatively small number of customers, and we expect our operating results will likely continue to depend on sales to a relatively small number of customers for the foreseeable future, as well as the ability of these customers to sell products that require our products in their manufacture. Many of our customer relationships have been developed over a short period of time and are generally in their preliminary stages. We cannot be certain that these customers will generate significant revenue for us in the future or if these customer relationships will continue to develop. If our relationships with our other customers do not continue to develop, we may not be able to expand our customer base or maintain or increase our revenue.

If any of our customers cancels or fails to accept a large system order, our financial position and results of operations could be materially and adversely affected.

Our backlog includes orders for large systems, such as our diffusion furnaces, with system prices of up to and in excess of $1.0 million depending on the system configuration, options included and any special requirements of the customer. Because our orders are typically subject to cancellation or delay by the customer, our backlog at any particular point in time is not necessarily representative of actual sales for succeeding periods, nor is backlog any assurance that we will realize revenue or profit from completing these orders. Our financial position and results of

operations could be materially and adversely affected should any large systems order be cancelled prior to shipment, or not be accepted by the customer. We have experienced significant cancellations in the past, including $1.2 million in fiscal 1999, $3.5 million in 2001, and $1.2 million in 2002. We have not experienced any significant cancellations since 2002. Likewise, a significant change in the liquidity or financial position of any of our customers that purchase large systems could have a material impact on the collectibility of our accounts receivable and our future operating results. Our backlog does not provide any assurance that we will realize revenue or profit from those orders or indicate in which period net revenue will be recognized, if ever.

Our business might be adversely affected by a decline in our sales to foreign customers.

During fiscal 2006, 65% of our net revenue came from customers outside of North America. During the nine months ended June 30, 2007, 71% of our net revenue came from customers outside of North America as follows:

- Asia (including Korea, People's Republic of China, Taiwan, Japan, Singapore, Malaysia, Australia and India) – 48% (includes 17% to China and 19% to Taiwan); and
- Europe – 23%.

Because of our significant dependence on revenue from international customers, our operating results could be negatively affected by a decline in the economies of any of the countries or regions in which we do business. Each region in the global semiconductor equipment market exhibits unique characteristics that can cause capital equipment investment patterns to vary significantly from period to period. Periodic local or international economic downturns, trade balance issues, political instability and fluctuations in interest and currency exchange rates could negatively affect our business and results of operations.

We recorded foreign currency transaction losses of $0.01 million during the first three quarters of fiscal 2007, losses of $0.1 million in 2006, gains of $0.1 million in 2005 and losses of $0.1 million during 2004. While our business has not been materially affected in the past by currency fluctuations, there is a risk that it may be materially adversely affected in the future. Such risk includes possible losses due to currency exchange rate fluctuations, possible future prohibitions against repatriation of earnings, or proceeds from disposition of investments, and from possible social and military instability in the case of India, South Korea, Taiwan and possibly elsewhere. Our wholly-owned subsidiary, Tempress Systems, has conducted its operations in The Netherlands since 1995 and during 2005 we established a subsidiary in Germany to conduct the European sales of our Bruce Technologies product line. In October 2007 we completed our acquisition of R2D, a French company. As a result, such operations are subject to the taxation policies, employment and labor laws, transportation regulations, import and export regulations and tariffs, possible foreign exchange restrictions, international monetary fluctuations, and other political, economic and legal policies of that nation, the European Economic Union and the other European nations in which it conducts business. Consequently, we might encounter unforeseen or unfamiliar difficulties in conducting our European operations. Changes in such laws and regulations may have a material adverse effect on our revenue and costs.

If our critical suppliers fail to deliver sufficient quantities of quality product in a timely and cost-effective manner, it could negatively affect our business.

We use a wide range of materials and services in the production of our products including custom electronic and mechanical components, and we use numerous suppliers of materials. We generally do not have guaranteed supply arrangements with our suppliers. Because of the variability and uniqueness of customer orders, we try to avoid maintaining an extensive inventory of materials for manufacturing. Key suppliers include two steel mills capable of producing the types of steel to the tolerances needed for our wafer carriers, an injection molder that molds plastic inserts into our steel carriers, an adhesive manufacturer that supplies the critical glue used in the production of the semiconductor polishing templates and a pad supplier that produces a unique material used to attach semiconductor wafers to the polishing template. We also rely on third parties for certain machined parts, steel frames and metal panels and other components used particularly in the assembly of semiconductor production equipment.

Although we make what we believe are reasonable efforts to ensure that parts are available from multiple suppliers, this is not always practical or even possible; accordingly, some key parts are being procured from a single supplier or a limited group of suppliers. During the semiconductor industry peak years, increases in demand for capital equipment resulted in longer lead-times for many important system components. Future increases in demand

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could cause delays in meeting shipments to our customers. Because the selling price of some of our systems exceeds $1.0 million, the delay in the shipment of even a single system could cause significant variations in our quarterly revenue, operating results and the market value of our common stock.

There can be no assurance that our financial position and results of operations will not be materially and adversely affected if, in the future, we do not receive in a timely and cost-effective manner a sufficient quantity and quality of parts to meet our production requirements.

The solar power industry is currently experiencing an industry-wide shortage of polysilicon. This shortage poses several risks to our business, including possible constraints on revenue growth and possible decreases in our gross margins and profitability.

Many of our customers are solar cell manufacturers. Polysilicon is an essential raw material in the production of solar cells. There is currently an industry-wide shortage of polysilicon, which has resulted in significant price increases. We expect that the average spot price of polysilicon will continue to increase and we expect that polysilicon demand will continue to outstrip supply throughout 2007 and potentially for a longer period. The inability of our solar industry customers to obtain sufficient polysilicon at commercially reasonable prices, or at all, would adversely affect future customer demand for our products and could cause us to make fewer shipments and generate lower than anticipated revenue, thereby seriously harming our business, financial condition and results of operations.

We might require additional financing to expand our operations.

We believe that current cash balances, our existing line of credit, cash flows generated from our operations and additional available financing, together with the proceeds of this offering, will provide adequate working capital for at least the next twelve months. However, we may require additional financing for further implementation of our growth plans. There is no assurance that any additional financing will be available if and when required, or, even if available, that it would not materially dilute the ownership percentage of the then existing shareholders, result in increased expenses or result in covenants or special rights that would restrict our operations.

We are exposed to risks from legislation requiring companies to evaluate their internal control over financial reporting.

Section 404 of the Sarbanes-Oxley Act of 2002 will require our management to report on the effectiveness of our internal control over financial reporting beginning in fiscal 2008. Our independent registered public accounting firm will be required to attest to the effectiveness of our internal control over financial reporting beginning in fiscal 2008. We have an ongoing program to perform the system and process evaluation and testing necessary to comply with these requirements. We expect to incur increased expense and to devote additional management resources to Section 404 compliance. In the event our chief executive officer, chief financial officer or independent registered public accounting firm determine that our internal control over financial reporting is not effective as defined under Section 404, investor perceptions of our company may be adversely affected and could cause a decline in the market price of our stock.

Terrorist attacks and threats or actual war may negatively impact all aspects of our operations, revenue, costs and stock price.

The 2001 terrorist attacks in the United States, as well as events occurring in response or connection to them, including future terrorist attacks against United States targets, rumors or threats of war, actual conflicts involving the United States or its allies or military or trade disruptions impacting our domestic or foreign suppliers of parts, components and subassemblies, may impact our operations, including, among other things, by causing delays or losses in the delivery of supplies or finished goods and decreased sales of our products. More generally, any of these events could cause consumer confidence and spending to decrease or result in increased volatility in the United States and worldwide financial markets and economy. They could also result in economic recession in the United States or abroad. Any of these occurrences could have a significant adverse impact on our financial position and results of operations.

We face the risk of product liability claims or other litigation, which could be expensive and divert management from running our business.

The manufacture and sale of our products, which in operation involve toxic materials, involve the risk of product liability claims. In addition, a failure of one of our products at a customer site could interrupt the business operations of our customer. Our existing insurance coverage limits may not be adequate to protect us from all liabilities that we might incur in connection with the manufacture and sale of our products if a successful product liability claim or series of product liability claims were brought against us. We may also be involved in

other legal proceedings or claims and experience threats of legal action from time to time in the ordinary course of our business.

Where appropriate, we intend to vigorously defend all claims. However, any actual or threatened claims, even if not meritorious or material, could result in the expenditure of significant financial and managerial resources. The continued defense of these claims and other types of lawsuits could divert management's attention away from running our business. Negative developments in lawsuits could cause our stock price to decline as well. In addition, required amounts to be paid in settlement of any claims, and the legal fees and other costs associated with such settlement, cannot be estimated and could, individually or in the aggregate, materially harm our financial condition.

We are subject to environmental regulations, and our inability or failure to comply with these regulations could result in significant costs or the suspension of our ability to operate segments of our business..

We are subject to environmental regulations in connection with our business operations, including regulations related to manufacturing and our customers' use of our products. From time to time, we receive notices regarding these regulations. It is our policy to respond promptly to these notices and to take any necessary corrective action. Our failure or inability to comply with existing or future environmental regulations could result in significant remediation liabilities, the imposition of fines and/or the suspension or termination of development, manufacturing or use of certain of our products, each of which could damage our financial position and results of operations.

Risks Related To The Securities Offered Pursuant to this Prospectus.

Our common stock is thinly traded and you may not be able to sell the securities at all or when you want to do so.

Our common stock currently is quoted on the NASDAQ Global Market and currently is thinly traded. During the year ended September 30, 2007, the daily trading volume for our common stock was as low as zero and as high as 2,208,301 as reported by NASDAQ. Our average daily trading volume was 178,896 shares for the quarter ended September 30, 2007 as reported by NASDAQ. Because of the limited public market for our common stock, you may be unable to sell our common stock when you want to do so if the trading market for our common stock continues to be limited.

Our current capital structure could delay, defer or prevent a change of control.

We are authorized to issue up to 100,000,000 shares of common stock and up to 100,000,000 shares of preferred stock. As of September 30, 2007, there were 6,517,923 shares of common stock outstanding. Authorized but unissued common stock may be issued for such consideration as the board of directors determines to be adequate. The board of directors may issue preferred stock with such rights, preferences, privileges and restrictions as they determine, without shareholder vote. Although we do not currently intend to issue any additional shares of our preferred stock, there can be no assurance that we will not do so in the future. Shareholders may or may not be given the opportunity to vote thereon, depending upon the nature and size of any such transactions, applicable law, the rules and policies of the national securities exchange on which the common stock or preferred stock, as the case may be, is then trading, if any, and the judgment of the board of directors. Shareholders have no preemptive rights to subscribe for newly issued shares of our capital stock.

On May 17, 1999, we declared a dividend distribution of one preferred share purchase right for each outstanding share of common stock. The dividend was payable on June 9, 1999 to shareholders of record as of the close of business on that date. Each right entitles the registered holder to purchase one one-hundredth of a share of Series A Participating Preferred Stock, subject to adjustment, at a price of $8.50 per one one-hundredth of a share of Preferred Stock, subject to adjustment. The rights issuance was adopted as protection against a takeover by a third party.

Having the outstanding rights, and a substantial number of authorized and unreserved shares of common stock, preferred stock and severance arrangements with key employees could have the effect of making it more difficult for a third party to acquire a majority of our outstanding voting stock. Management could use the additional shares to resist a takeover effort even if the terms of the takeover offer are favored by a majority of the independent shareholders. This could delay, defer or prevent a change in control.

Shares eligible for future sale may cause the market price of our common stock to drop significantly, even if our business is doing well.

The market price of our common stock could decline as a result of sales of a large number of shares of our common stock in the market after this offering or the perception that these sales could occur. These sales, or the possibility that these sales may occur, also might make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate.

After the consummation of this offering, there will be shares of our common stock (shares if the underwriters exercise their over-allotment option in full) outstanding. The shares of common stock sold in this offering (shares if the underwriters exercise their over-allotment option in full) will be freely tradable without restriction or further registration under the Securities Act of 1933, as amended, by persons other than our affiliates within the meaning of Rule 144 under the Securities Act.

If our securities become ineligible for trading on NASDAQ, they might be subject to Rule 15g-9 of the Securities Exchange Act of 1934, which imposes additional sales practice requirements on broker-dealers who sell such securities to persons other than established customers and accredited investors.

While our common stock is now included on the NASDAQ Global Market, continued listing on NASDAQ will depend on our ability to meet certain eligibility requirements established from time to time by the NASDAQ Global Market. Loss of NASDAQ eligibility could result from material operating losses, or if the market price of our common stock falls below $1.00 per share. For transactions covered by the rule, the broker-dealer must make a special suitability determination for the purchaser and receive the purchaser s written consent to the transaction prior to the sale. The rule may adversely affect the ability of broker-dealers to sell our securities, and consequently may limit the public market for, and the trading price of, our common stock.

Our stock price is volatile and you might not be able to resell your securities at or above the price you have paid.

You might not be able to sell the shares of our common stock at or above the price you have paid. The market price of our common stock might fluctuate significantly in response to many factors, some of which are beyond our control, including the following:

- actual or anticipated fluctuations in our annual and quarterly results of operations;
- changes in securities analysts expectations;
- variations in our operating results, which could cause us to fail to meet analysts or investors expectations;
- announcements by our competitors or us of significant technical innovations, contracts, acquisitions, strategic partnerships, joint ventures or capital commitments;
- conditions and trends in the semiconductor equipment industry;
- general market, economic, industry and political conditions;
- changes in market values of comparable companies;
- additions or departures of key personnel;

- stock market price and volume fluctuations attributable to inconsistent trading volume levels; and
- future sales of equity or debt securities, including sales which dilute existing investors.

In addition, the stock market has experienced extreme volatility that often has been unrelated to the performance of its listed companies. Moreover, only a limited number of our shares are traded each day, which could increase the volatility of the price of our stock. These market fluctuations might cause our stock price to fall regardless of our performance. In the past, companies that have experienced volatility in the market price of their stock have been the objects of securities class action litigation. If we were involved in securities class action litigation, it could result in substantial costs and a diversion of our attention and resources and have a material adverse effect on our business.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains certain forward-looking statements that involve a number of risks and uncertainties.

Certain information in this prospectus contains statements that are forward-looking in nature. All statements included in this prospectus, or made by the management of Amtech Systems, Inc. and its subsidiaries, or Amtech, other than statements of historical fact, are hereby identified as "forward-looking statements" (as such term is defined in Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended). Examples of forward-looking statements include statements regarding our belief that the solar industry will continue to expand, our future financial results, operating results, business strategies, projected costs, products under development such as our small batch vertical furnace, competitive positions and plans and objectives of Amtech and our management for future operations. In some cases, forward-looking statements can be identified by terminology such as "may," "will," "should," "would," "expec "plans," "anticipates," "intends," "believes," "estimates," "predicts," "potential," "continue," or the negative of thes other comparable terminology. Any expectations based on these forward-looking statements are subject to risks and uncertainties and other important factors, including the "Risk Factors" discussed herein. These and many other factors could affect our future operating results and financial condition and could cause actual results to differ materially from expectations based on forward-looking statements made in this document or elsewhere by us or on our behalf. All references to "we," "our," "us," or "Amtech" refer to Amtech Systems, Inc. and its subsidiaries.

We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, after the date of this prospectus to conform them to actual results. All of the forward-looking statements are qualified in their entirety by reference to the factors discussed under the caption "Risk Factors."

We caution the reader that these risk factors may not be exhaustive. We operate in a continually changing business environment and new risk factors emerge from time to time. Management cannot predict such new risk factors, nor can it assess the impact, if any, of such new risk factors on our businesses or the extent to which any factor or combination of factors may cause actual results to differ materially from those projected in any forward-looking statements. In light of these risks, uncertainties and assumptions, the forward-looking events discussed in this prospectus might not occur.

For these statements, we claim the protection of the safe harbor for forward-looking statements contained in Section 21E of the Securities Act.

You should carefully read this prospectus in its entirety. It contains information that you should consider when making your investment decision.

USE OF PROCEEDS

We estimate that we will receive net proceeds from our offering of our common stock, after deducting the estimated underwriting discount and commissions and other estimated offering expenses payable by us, of approximately $, or approximately $ if the underwriter exercises its over-allotment option in full, in each case assuming the shares are offered at $ per share. We intend to use the net proceeds from this offering for working capital and other general corporate purposes. Pending application of these proceeds, we intend to invest the net proceeds of this offering in short-term, interest bearing investment grade securities.

DIVIDEND POLICY

We have never paid cash dividends on our common stock. Our present policy is to apply cash to investment in product development, acquisition or expansion; consequently, we do not expect to pay dividends on our common stock in the foreseeable future.

SELECTED CONSOLIDATED FINANCIAL DATA

We derived the consolidated operating and balance sheet data for the fiscal years ended September 30, 2004, 2005 and 2006 from our audited consolidated financial statements included elsewhere in this prospectus. We derived the consolidated operating and balance sheet data for the fiscal years ended September 30, 2002 and 2003 from our audited consolidated financial statements not included in this prospectus. The selected historical consolidated financial and balance sheet data for the nine months ended June 30, 2006 and June 30, 2007 were derived from our unaudited historical consolidated financial statements included elsewhere in this prospectus. The selected pro forma financial information for the nine months ended June 30, 2007 is derived from our unaudited historical condensed consolidated financial statements and the unaudited historical financial statements of R2D included elsewhere in this prospectus.

The following selected financial data should be read in conjunction with the section of this prospectus entitled Management s Discussion and Analysis of Financial Condition and Results of Operations, our consolidated financial statements (including the related notes thereto) and the unaudited historical financial statements of R2D included elsewhere in this prospectus.

	Years Ended September 30,					Nine Months En	
	2002	2003	2004	2005	2006	2006	200
			(Audited)				(Unaudi
	(In thousands, except percentages and per share amounts)						
Operating Data:							
Net revenues	$20,533	$19,434	$ 19,299	$ 27,899	$40,445	$ 29,157	$ 32,8
Gross profit	$ 4,997	$ 4,835	$ 3,949	$ 7,668	$10,575	$ 7,917	$ 8,68
Gross profit %	24.3%	24.9%	20.5%	27.5%	26.1%	27.2%	26
Operating income (loss)	$ 77	$ (245)	$ (2,035)	$ (244)	$ 1,635	$ 1,106	$ 97
Net income (loss)	$ 118	$ (100)	$ (3,165)	$ (259)	$ 1,318	$ 822	$ 1,27
Dividends on convertible referred stock	$	$	$	$ (76)	$ (81)	$	$
Net income (loss) attributable to common	$ 118	$ (100)	$(3,165)	$ (335)	$ 1,237	$ 822	$ 1,27
Earnings (loss) per share:							
Basic earnings (loss) per share	$ 0.04	$ (0.04)	$ (1.17)	$ (0.12)	$ 0.40	$ 0.25	$ 0.2
Diluted earnings (loss) per share	$ 0.04	$ (0.04)	$ (1.17)	$ (0.12)	$ 0.38	$ 0.24	$ 0.2
Balance Sheet Data:							
Cash and cash							

equivalents	$ 8,046	$ 7,453	$ 1,674	$ 3,309	$ 6,433	$ 3,574	$17,87
Working capital	$12,166	$12,727	$ 7,735	$ 9,968	$11,883	$11,400	$29,72
Current ratio	5.5:1	4.9:1	2.7:1	3.7:1	2.6:1	2.6:1	4.1
Total assets	$17,393	$18,399	$16,660	$17,701	$23,563	$22,647	$46,99
Total current liabilities	$ 2,722	$ 3,259	$ 4,531	$ 3,752	$ 7,337	$ 7,091	$ 9,53
Long-term obligations	$ 459	$ 640	$ 474	$ 741	$ 617	$ 650	$ 77
Convertible preferred stock	$	$	$	$ 1,935	$	$	$
Total stockholders equity	$14,212	$14,499	$11,655	$13,208	$15,609	$14,906	$36,68

(1) The pro forma operating and balance sheet data gives effect to the acquisition of R2D as though it had occurred on October 1, 2006. The balance sheet data also gives effect to the receipt of net proceeds of approximately $34.5 million from the sale of shares of common stock offered by us in this public offering (and assumes that the underwriters will exercise the over-allotment option granted to them by us), after deducting the underwriting discount and estimated offering expenses payable by us.

QUARTERLY CONSOLIDATED FINANCIAL DATA

The following table presents unaudited quarterly financial information for each of the eleven quarters ended June 30, 2007. In the opinion of management, this information contains all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation thereof. The operating results are not necessarily indicative of results for any future periods. Quarter-to-quarter comparisons should not be relied upon as indicators of future performance. Our operating results are subject to quarterly fluctuations as a result of a number of factors. See Risk Factors Risk Related to our Business and Industry.

	For the Quarter Ended								
	2005				2006				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	(dollars in thousands, except per share amounts)								
Operating Data:	(unaudited)								
Net revenues	$7,172	$8,915	$5,507	$ 6,305	$7,914	$10,892	$ 10,351	$11,288	$9,451
Gross profit	$2,134	$2,507	$1,732	$ 1,295	$2,537	$ 2,737	$2,643	$ 2,658	$2,392
Gross profit %	29.8%	28.1%	31.5%	20.5%	32.1%	25.1%	25.5%	23.5%	25.3%
Operating income (loss)	$ 97	$ 459	$ 78	$ (878)	$ 478	$ 427	$ 201	$ 529	$ 55
Net income (loss)	$ 68	$ 503	$ 132	$ (962)	$ 471	$ 182	$ 168	$ 497	$ 6
Dividends on convertible preferred stock	$	$	$ 33	$ 43	$ 44	$ 37	$	$	$
Net income (loss) attributable to common	$ 68	$ 503	$ 99	$(1,005)	$ 427	$ 182	$ 168	$ 497	$ 6
Earnings (loss)									