UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

[X] QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended: December 31, 2018

OR

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

For the transition period from ________________ to ________________

Commission File Number: 0-11412

AMTECH SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Arizona	86-0411215
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
131 South Clark Drive, Tempe, Arizona	85281
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: 480-967-5146

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). [X] Yes [ ] No

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

Large accelerated filer [ ]	Accelerated filer [X]
Non-accelerated filer [ ] (Do not check if a smaller reporting company)	Smaller Reporting Company [X]
	Emerging Growth Company [ ]

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.[ ]

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

Shares of Common Stock outstanding as of January 25, 2019: 14,227,580

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
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Cautionary Statement Regarding Forward-Looking Statements

Unless otherwise indicated, the terms “Amtech,” the “Company,” “we,” “us” and “our” refer to Amtech Systems, Inc. together with its subsidiaries.

Our discussion and analysis in this Quarterly Report on Form 10-Q, our Annual Report on Form 10-K, our other reports that we file with the Securities and Exchange Commission (the “SEC”), our press releases and in public statements of our officers and corporate spokespersons contain “forward-looking” statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the Private Securities Litigation Reform Act of 1995. Forward-looking statements give our current expectations or forecasts of future events. You can identify these statements by the fact that they do not relate strictly to historical or current events. We have tried, wherever possible, to identify such statements by using words such as “may,” “plan,” “anticipate,” “seek,” “will,” “expect,” “intend,” “estimate,” “anticipate,” “believe,” “continue,” “predict,” “potential,” “project,” “should,” “would,” “likely,” “future,” “target,” “forecast,” “goal,” “observe,” and “strategy” or the negative thereof or variations thereon or similar terminology. Some factors that could cause actual results to differ materially from those anticipated include, among others, future economic conditions, including changes in the markets in which we operate; difficulties in executing our Solar restructuring plan; changes in demand for our services and products; our ability to successfully complete and obtain additional turnkey orders and the associated costs and risks related thereto; difficulties in successfully executing our growth initiatives; the effects of semiconductor trends on our annual goodwill impairment analysis; the effects of competition in the markets in which we operate, including the adverse impact of competitive product announcements or new entrants into our markets and transfers of resources by competitors into our markets; control of costs and expenses; risks associated with new technologies and the impact on our business; legislative, regulatory, and competitive developments in markets in which we operate; possible future claims, litigation or enforcement actions and the results of any such claim, litigation proceeding, or enforcement action; and other circumstances and risks identified in this Quarterly Report or referenced from time to time in our filings with the SEC. These and many other factors could affect Amtech’s 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 Amtech or on its behalf.

You should not place undue reliance on these forward-looking statements. We cannot guarantee that any forward-looking statement will be realized, although we believe that the expectations reflected in the forward-looking statements are reasonable as of the date of this Quarterly Report. Achievement of future results is subject to events out of our control, risks, uncertainties and potentially inaccurate assumptions. The Annual Report on Form 10-K that we filed with the SEC for the year-ended September 30, 2018 listed various important factors that could affect Amtech’s future operating results and financial condition and could cause actual results to differ materially from historical results and expectations based on forward-looking statements made in this document or elsewhere by Amtech or on its behalf. These factors can be found under the heading “Item 1A. Risk Factors” in the Annual Report on Form 10-K and investors should refer to them as well as the additional risk factors identified in this Quarterly Report. Because it is not possible to predict or identify all such factors, any such list cannot be considered a complete set of all potential risks or uncertainties.

The Company undertakes no obligation to update or publicly revise any forward-looking statement whether as a result of new information, future developments or otherwise. All subsequent written or oral forward-looking statements attributable to the Company or persons acting on its behalf are expressly qualified in their entirety by this paragraph. You are advised, however, to consult any further disclosures we make on related subjects in our subsequently filed Form 10-Q and Form 8-K reports and our other filings with the SEC. As noted above, we provide a cautionary discussion of risks, uncertainties and possibly inaccurate assumptions relevant to our business under “Item 1A. Risk Factors” of the Annual Report on Form 10-K. We note these factors for investors as permitted by the Private Securities Litigation Reform Act of 1995. You should understand it is not possible to predict or identify all such factors.

PART I. FINANCIAL INFORMATION

Item 1. Condensed Consolidated Financial Statements

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Balance Sheets
(in thousands, except share data)

	December 31, 2018 (Unaudited)	September 30, 2018
Assets		
Current Assets		
Cash and cash equivalents	$ 55,969	$ 58,331
Restricted cash	5,009	4,165
Accounts receivable		
Trade (less allowance for doubtful accounts of $1,358 and $1,407 at December 31, 2018, and September 30, 2018, respectively)	23,137	20,475
Unbilled and other	—	12,749
Inventories	23,808	24,710
Contract assets	4,601	—
Other current assets	3,688	3,860
Total current assets	116,212	124,290
Property, Plant and Equipment - Net	16,148	16,452
Intangible Assets - Net	1,066	1,130
Goodwill - Net	6,633	6,633
Other Assets	864	901
Total Assets	$ 140,923	$ 149,406
Liabilities and Shareholders' Equity		
Current Liabilities		
Accounts payable	$ 11,828	$ 11,374
Accrued compensation and related taxes	7,041	7,394
Accrued warranty expense	944	1,040
Other accrued liabilities	3,876	4,239
Current maturities of long-term debt	378	374
Contract liabilities	12,236	18,369
Income taxes payable	2,913	2,353
Total current liabilities	39,216	45,143
Long-Term Debt	7,878	7,960
Income Taxes Payable	3,481	3,213
Total Liabilities	50,575	56,316
Commitments and Contingencies		
Shareholders' Equity		
Preferred stock; 100,000,000 shares authorized; none issued	—	—
Common stock; $0.01 par value; 100,000,000 shares authorized; shares issued and outstanding: 14,227,580 and 14,216,596 at December 31, 2018 and September 30, 2018, respectively	142	142
Additional paid-in capital	124,522	124,316
Accumulated other comprehensive loss	(10,550)	(9,974)
Retained deficit	(23,766)	(21,394)
Total shareholders' equity	90,348	93,090
Total Liabilities and Shareholders' Equity	$ 140,923	$ 149,406

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Operations
(Unaudited)
(in thousands, except per share data)

	Three Months Ended December 31,	
	2018	**2017**
Revenues, net of returns and allowances	$ 29,453	$ 73,611
Cost of sales	20,328	53,274
Gross profit	9,125	20,337
Selling, general and administrative	8,221	10,580
Research, development and engineering	1,946	1,991
Restructuring charges	874	—
Operating (loss) income	(1,916)	7,766
Loss from equity method investment	—	(26)
Interest income (expense) and other income, net	144	(48)
(Loss) Income before income taxes	(1,772)	7,692
Income tax provision	600	1,240
Net (loss) income	$ (2,372)	$ 6,452
(Loss) Income Per Share:		
Basic (loss) income per share attributable to Amtech shareholders	$ (0.17)	$ 0.44
Weighted average shares outstanding	14,220	14,781
Diluted (loss) income per share attributable to Amtech shareholders	$ (0.17)	$ 0.42
Weighted average shares outstanding	14,220	15,298

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Comprehensive Income (Loss)
(Unaudited)
(in thousands)

	Three Months Ended December 31,	
	2018	**2017**
Net (loss) income	$ (2,372)	$ 6,452
Foreign currency translation adjustment	(576)	541
Comprehensive (loss) income	$ (2,948)	$ 6,993

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Shareholders' Equity
(Unaudited)
(in thousands)

	Common Stock					
	Shares	Par Value	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings (Accumulated Deficit)	Total Shareholders' Equity
Balance at September 30, 2017	14,711	$ 147	$ 125,564	$ (8,529)	$ (26,699)	$ 90,483
Net income	—	—	—	—	6,452	6,452
Translation adjustment	—	—	—	541	—	541
Stock compensation expense	—	—	253	—	—	253
Stock options exercised	165	2	1,198	—	—	1,200
Balance at December 31, 2017	14,876	$ 149	$ 127,015	$ (7,988)	$ (20,247)	$ 98,929
Balance at September 30, 2018	14,217	$ 142	$ 124,316	$ (9,974)	$ (21,394)	$ 93,090
Net loss	—	—	—	—	(2,372)	(2,372)
Translation adjustment	—	—	—	(576)	—	(576)
Stock compensation expense	—	—	169	—	—	169
Stock options exercised	11	—	37	—	—	37
Balance at December 31, 2018	14,228	$ 142	$ 124,522	$ (10,550)	$ (23,766)	$ 90,348

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

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AMTECH SYSTEMS, INC. AND SUBSIDIARIES
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(in thousands)

	Three Months Ended December 31, 2018	2017
Operating Activities		
Net (loss) income	$ (2,372)	$ 6,452
Adjustments to reconcile net (loss) income to net cash used in operating activities:		
Depreciation and amortization	443	471
Write-down of inventory	557	41
Capitalized interest	106	143
Deferred income taxes	7	(7)
Non-cash share-based compensation expense	169	253
Loss from equity method investment	—	26
Provision for allowance for doubtful accounts, net	44	48
Changes in operating assets and liabilities:		
Accounts receivable	(2,568)	(8,869)
Inventories	228	7,558
Contract and other assets	7,939	6,974
Accounts payable	520	(1,255)
Accrued income taxes	831	1,087
Accrued and other liabilities	(684)	731
Contract liabilities	(5,866)	(28,275)
Net cash used in operating activities	(646)	(14,622)
Investing Activities		
Purchases of property, plant and equipment	(152)	(93)
Net cash used in investing activities	(152)	(93)
Financing Activities		
Proceeds from the exercise of stock options	37	1,199
Payments on long-term debt	(95)	(89)
Net cash (used in) provided by financing activities	(58)	1,110
Effect of Exchange Rate Changes on Cash, Cash Equivalents and Restricted Cash	(662)	453
Net Decrease in Cash, Cash Equivalents and Restricted Cash	(1,518)	(13,152)
Cash, Cash Equivalents and Restricted Cash, Beginning of Period	62,496	75,761
Cash, Cash Equivalents and Restricted Cash, End of Period	$ 60,978	$ 62,609

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

AMTECH SYSTEMS, INC. AND SUBSIDIARIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
THREE MONTHS ENDED DECEMBER 31, 2018 AND 2017
(UNAUDITED)

1. Basis of Presentation and Significant Accounting Policies

Nature of Operations and Basis of Presentation – Amtech Systems, Inc. (the "Company," "Amtech," "we," "our" or "us") is a leading, global manufacturer of capital equipment, including thermal processing and wafer handling automation, and related consumables used in fabricating semiconductor devices, light-emitting diodes, or LEDs, silicon carbide (SiC) and silicon power chips and solar cells. We sell these products to semiconductor and solar cell manufacturers worldwide, particularly in Asia, the United States and Europe.

We serve niche markets in industries that are experiencing rapid technological advances and which historically have been very cyclical. Therefore, future profitability and growth depend on our ability to develop or acquire and market profitable new products and on our ability to adapt to cyclical trends.

The accompanying unaudited condensed consolidated financial statements have been prepared pursuant to the rules and regulations of the U.S. Securities and Exchange Commission (the "SEC"), and consequently do not include all disclosures normally required by accounting principles generally accepted in the United States of America. In the opinion of management, the accompanying unaudited interim condensed consolidated financial statements contain all adjustments necessary, all of which are of a normal and recurring nature, to present fairly our financial position, results of operations and cash flows. Certain information and note disclosures normally included in financial statements have been condensed or omitted pursuant to the rules and regulations of the SEC. These unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto included in our Annual Report on Form 10-K for the fiscal year ended September 30, 2018.

The consolidated results of operations for the three months ended December 31, 2018, are not necessarily indicative of the results to be expected for the full fiscal year.

Principles of Consolidation – The consolidated financial statements include the accounts of the Company and our wholly-owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates – The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Reclassifications – Certain reclassifications have been made to prior year financial statements to conform to the current year presentation. These reclassifications had no effect on the previously reported Consolidated Financial Statements for any period.

Shipping Expense – Shipping expenses of $0.5 million and $1.2 million for the three months ended December 31, 2018 and 2017, respectively, are included in selling, general and administrative expenses.

Research, Development and Engineering Expense – The table below shows gross research and development expenses and grants earned, in thousands:

	Three Months Ended December 31,	
	2018	**2017**
Research, development and engineering	$ 2,129	$ 2,290
Grants earned	(183)	(299)
Net research, development and engineering	$ 1,946	$ 1,991

Concentrations of Credit Risk – Our customers consist of solar cell and semiconductor manufacturers worldwide, as well as the lapping and polishing marketplace. Financial instruments that potentially subject us to significant concentrations of credit risk consist principally of cash and trade accounts receivable. Credit risk is managed by performing ongoing credit evaluations of the customers' financial condition, by requiring significant deposits where appropriate, and by actively monitoring collections. Letters of credit are required of certain customers depending on the size of the order, type of customer or its creditworthiness, and country of domicile.

As of December 31, 2018, one Semiconductor segment customer individually represented 16% of accounts receivable. As of September 30, 2018, one Solar segment customer individually represented 23% of accounts receivable.

We maintain our cash, cash equivalents and restricted cash in multiple financial institutions. Balances in the United States, which account for approximately 62% and 65% of total cash balances as of December 31, 2018 and September 30, 2018, respectively, are primarily invested in U.S. Treasuries or are in financial institutions insured by the Federal Deposit Insurance Corporation ("FDIC"). The remainder of our cash is maintained with financial institutions with reputable credit ratings in The Netherlands, France, China, the United Kingdom, Singapore and Malaysia. We maintain cash in bank accounts in amounts which at times may exceed federally insured limits. We have not experienced any losses on such accounts.

Refer to Note 10 to Condensed Consolidated Financial Statements for information regarding major customers, foreign sales and revenue in other countries subject to fluctuation in foreign currency exchange rates.

Impact of Recently Issued Accounting Pronouncements

See Note 2 for information on our adoption of Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 606, Revenue from Contracts with Customers ("ASC 606"), which amends the existing accounting standards for revenue recognition. The adoption of ASC 606 did not have a material effect on our results of operations.

In November 2016, the FASB issued Accounting Standard Update ("ASU") 2016-18, "Statement of Cash Flows: Restricted Cash." The amendments address diversity in practice that exists in the classification and presentation of changes in restricted cash and require that a statement of cash flows explain the change during the period in the total of cash, cash equivalents and amounts generally described as restricted cash or restricted cash equivalents. We adopted this standard retrospectively effective October 1, 2018, and, accordingly, to conform to the current period presentation, we reclassified our restricted cash to be included in the total of cash and cash equivalents presented at the bottom of our consolidated statements of cash flows for both the beginning and ending periods for our three months ended December 31, 2018 and 2017. As a result, the amount of the change in our net cash provided by operating activities no longer separately shows the change in restricted cash for either period.

The following table summarizes the effects related to the adoption of ASU 2016-18 for the three months ended December 31, 2017:

	December 31, 2017	
	As reported	**As adjusted**
Net cash provided by (used in) operating activities	$ 263	$ (14,622)
Effect of Exchange Rate Changes on Cash, Cash Equivalents and Restricted Cash	$ 295	$ 453
Net Increase (Decrease) in Cash, Cash Equivalents and Restricted Cash	$ 1,575	$ (13,152)
Cash, Cash Equivalents and Restricted Cash, Beginning of Period	$ 51,121	$ 75,761
Cash, Cash Equivalents and Restricted Cash, End of Period	$ 52,696	$ 62,609

There have been no other material changes or additions to the recently issued accounting standards other than those previously reported in Note 1 to our Consolidated Financial Statements in Part II, Item 8 of our Annual Report on Form 10-K for the year ended September 30, 2018 that affect or may affect our financial statements.

2. Contracts with Customers

We are a leading, global manufacturer of capital equipment, including thermal processing and wafer handling automation, and related consumables used in fabricating semiconductor devices, light-emitting diodes, or LEDs, silicon carbide ("SiC") and silicon power chips and solar cells. We sell these products to semiconductor and solar cell manufacturers worldwide, particularly in Asia, the United States and Europe. We operate in three reportable business segments, based primarily on the industry they serve: (i) Semiconductor, (ii) Solar and (iii) Polishing. In our Semiconductor segment, we supply thermal processing equipment, including solder reflow ovens, diffusion furnaces, and customer high-temp belt furnaces for use by semiconductor and electronics assembly manufacturers. In our Polishing segment, we produce substrate consumables and machinery for lapping (fine abrading) and polishing of materials, such as silicon wafers for semiconductor products, sapphire wafers for LED applications, compound substrates, like silicon carbide wafers, for power device applications. In our Solar segment, we supply thermal processing systems, including diffusion furnace, plasma-enhanced chemical vapor deposition ("PECVD") system, atomic layer deposition ("ALD") system, and related automation, to the photovoltaic solar industry.

Under ASC 606, revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration expected to be received in exchange for those goods or services. A performance obligation is a promise in a contract to transfer a product or service to the customer. The transaction price of a contract is allocated to each distinct performance obligation based upon the relative standalone selling price for each performance obligation and is recognized as revenue upon satisfaction of the performance obligation.

We implemented ASC 606 as of October 1, 2018 using the modified retrospective approach with no cumulative effect adjustment recorded to the opening balance of accumulated deficit. Prior period amounts have not been restated and continue to be reported under the accounting standards in effect for those periods. Upon adoption of ASC 606, we changed our accounting policy for the installation performance obligation included in all Solar segment system sales. Previously under ASC 605, we deferred revenue for the fair value of the installation and recognized it when earned. Under ASC 606, we will no longer record a deferral but will continue to recognize the revenue when earned. This change in policy does not result in a change in the amount of revenue recorded; instead, it removes the installation liability from our balance sheet.

To achieve the core principle of the standard, we apply the following five steps:

1) *Identify the contract with the customer*

A contract with a customer exists when (i) the Company enters into an enforceable contract with a customer that defines each party's rights regarding the goods or services to be transferred and identifies the related payment terms, (ii) the contract has commercial substance, and (iii) the Company determines that collection of substantially all consideration for goods and services that are transferred is probable based on the customer's intent and ability to pay the promised consideration.

2) *Identify the performance obligations in the contract*

Performance obligations promised in a contract are identified based on the goods and services that will be transferred to the customer that are both capable of being distinct, whereby the customer can benefit from the good or service either on its own or together with other available resources, and are distinct in the context of the contract, whereby the transfer of the good or service is separately identifiable from other promises in the contract to the customer. To the extent a contract includes multiple promised goods and services, the Company must apply judgment to determine whether promised goods and services are capable of being distinct and distinct in the context of the contract. If these criteria are not met, the promised goods and services are accounted for as a combined performance obligation.

Our equipment sales consist of multiple performance obligations, including the system itself and obligations that are not delivered simultaneously with the system, primarily installation services. Customers who purchase new systems are provided an assurance-type warranty, generally for periods of 12 to 24 months. In accordance with ASC 606, assurance-type warranties are not considered a performance obligation.

3) *Determine the transaction price*

The transaction price is determined based on the consideration to which the Company will be entitled in exchange for transferring goods and services to the customer. The transaction price for equipment sales is adjusted for estimated product returns that we expect to occur under our return policy based upon historical return rates, which have historically been immaterial. In rare cases when the transaction price includes variable consideration, the Company estimates the amount of variable consideration that should be included in the transaction price utilizing either the expected value method or the most likely amount method depending on the nature of the variable consideration. Any estimates, including the effect of the constraint on variable consideration, are evaluated at each reporting period for any changes.

The transaction price for all transactions is based on the price reflected in the individual customer's purchase order. Variable consideration has not been identified as a significant component of the transaction price for any of our transactions.

The Company has determined that most contracts will be completed in less than one year. For those transactions where all performance obligations will be satisfied within one year or less, the Company is applying the practical expedient outlined in ASC 606-10-32-18. This practical expedient allows the Company not to adjust promised consideration for the effects of a significant financing component if the Company expects at contract inception the period between when the Company transfers the promised good or service to a customer and when the customer pays for that good or service will be one year or less. For those transactions that are expected to be completed after one year, the Company has assessed that there are no significant financing components because any difference between the promised consideration and the cash selling price of the good or service is for reasons other than the provision of financing.

4) *Allocate the transaction price to performance obligations in the contract*

If the contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. Contracts that contain multiple distinct performance obligations require an allocation of the transaction price to each distinct performance obligation on a relative standalone selling price basis unless the transaction price is variable and meets the criteria to be allocated entirely to each distinct performance obligation or to a distinct service that forms part of a single performance obligation.

Where required, the Company determines the standalone selling price ("SSP") for each performance obligation based on consideration of both market and Company specific factors, including the selling price and profit margin for similar products.

For those contracts that contain multiple performance obligations (primarily system sales requiring installation services), the Company must determine the SSP. To determine the SSP for labor related performance obligations (such as the labor component of installation), the Company used directly observable inputs based on the standalone sale prices for these services. The Company used a cost plus margin approach in determining the SSP for any materials related performance obligations (e.g., system add-ons, spare parts, and systems).

5) *Recognize revenue when or as the Company satisfied a performance obligation*

The Company satisfies performance obligations either over time or at a point in time. Revenue is recognized over time if either 1) the customer simultaneously receives and consumes the benefits provided by the entity's performance, 2) the entity's performance creates or enhances an asset that the customer controls as the asset is created or enhanced, or 3) the entity's performance does not create an asset with an alternative use to the entity and the entity has an enforceable right to payment for performance completed to date. If the entity does not satisfy a performance obligation over time, the related performance obligation is satisfied at a point in time by transferring the control of a promised good or service to a customer. Examples of control are using the asset to produce goods or services, enhance the value of other assets, settle liabilities, and holding or selling the asset. For over time recognition, ASC 606 requires the Company to select a single revenue recognition method for the performance obligation that faithfully depicts the Company's performance in transferring control of the goods and services. The guidance allows entities to choose between two methods to measure progress toward complete satisfaction of a performance obligation:

Output methods - recognize revenue on the basis of direct measurements of the value to the customer of the goods or services transferred to date relative to the remaining goods or services promised under the contract (e.g., surveys of performance completed to date, appraisals of results achieved, milestones reached, time elapsed, and units of produced or units delivered); and

Input methods - recognize revenue on the basis of the entity's efforts or inputs to the satisfaction of a performance obligation (e.g., resources consumed, labor hours expended, costs incurred, or time elapsed) relative to the total expected inputs to the satisfaction of that performance obligation.

Equipment and related product revenues (e.g., furnace systems, system add-ons, machinery, consumables and spare parts) are recognized at a point in time, when they are shipped or delivered, depending on contractual terms.

For installation services, revenue is recognized at a point in time, once the installation of the tool is complete. The nature of the installation services are such that the customer does not simultaneously receive and consume the benefits provided by the entity's performance, nor does performance of installation services create or enhance an asset that the customer controls. Installation services do not create an asset with an alternative use to the entity, and the entity does not have an enforceable right to payment for performance completed to date.

Maintenance and service contracts are recognized over time. Progress in the satisfaction of these performance obligations will be measured using an input method of either time elapsed in the case of fixed period contracts, or labor hours expended, in the case of project-based contracts.

Cost to Obtain and Fulfill a Contract with a Customer

The Company recognizes an asset related to incremental costs of obtaining a contract with a customer if the Company expects to recover those costs. The Company will recognize an asset from costs incurred to fulfill a contract only if such costs relate directly to a contract that the entity can specifically identify, the costs generate or enhance resources of the Company that will be used in satisfying performance obligations in the future, and the costs are expected to be recovered. Any assets recognized related to costs to obtain or fulfill a contract are amortized to selling, general and administrative expense on a systematic basis that is consistent with the transfer to the customer of the goods or services to which the asset relates.

In substantially all of our business transactions, we incur incremental costs to obtain contracts with customers, in the form of sales commissions. We maintain a commission program which awards our sales representatives for system sales and our employees for system sales and other individual goals. Under ASC 606, an asset shall be amortized on a systematic basis that is consistent with the transfer to the customer of the goods or services to which the asset relates. However, ASC 606 provides a practical expedient to allow for the recognition of commission expense when incurred if the amortization period of the asset that the entity otherwise would have recognized is one year or less. Based on the nature of the Company's contracts with customers, we have elected this practical expedient and will expense all commissions as incurred based upon the expectation that the amortization period would be one year or less.

Revenue Categories used by Management

Management reviews disaggregated revenue at the operating segment level. Revenue-generating transactions vary between our operating segments due to several factors. For example, installation for our Solar systems is a longer process due to the complexities of the chemicals and equipment involved. Additionally, lead times are longer in our Solar operating segment than in our Semiconductor or Polishing segments. Most of the revenue for our Polishing segment results from the sale of consumables, rather than equipment sales. These consumables have a much shorter production period than equipment produced by our other operating segments. Due to these variations between operating segments, management determined that disaggregated revenue by segment sufficiently depicts how economic factors affect the nature, amount, timing and uncertainty of our revenue and cash flows.

Contract assets and liabilities

Contract assets consist of amounts the Company is not legally able to invoice but has completed the related performance obligation. These amounts generally arise from variances between the contractual payment terms and the transaction price assigned to the open performance obligations (e.g., the Company has recognized revenue in an amount greater than the amount that is billable under the contract). Contract assets are reflected in current assets on the consolidated balance sheets.

Contract liabilities are reflected in current liabilities on the consolidated balance sheets as all performance obligations are expected to be satisfied within the next 12 months. Contract liabilities include customer deposits and deferred profit. Contract liabilities relate to payments invoiced or received in advance of completion of performance obligations under a contract. Contract liabilities are recognized as revenue upon the fulfillment of performance obligations. This amount relates primarily to prepayments for system sales and installation services.

Solar system transactions have payment terms that generally require a down payment (20%-30% of contract price), followed by a second payment due upon shipment of the system (40%-50% of contract price), with a final payment due upon acceptance of the installation (10%-20% of contract price). Semiconductor system transactions have payment terms that generally require a payment due upon shipment of the system (80%-90% of contract price) and a final payment due upon installation or acceptance.

The components of contract assets are as follows, in thousands:

	December 31, 2018
Unbilled accounts receivable	$ 4,601
Contract assets	$ 4,601

The components of contract liabilities are as follows, in thousands:

	December 31, 2018	September 30, 2018
Customer deposits	$ 11,065	$ 15,298
Deferred revenues	3,547	5,616
Deferred costs	(2,376)	(2,545)
Contract liabilities	$ 12,236	$ 18,369

For the three months ended December 31, 2018, we recognized previously deferred gross profit of $0.5 million.

3. Restructuring

In July 2018, we established a restructuring plan related to our operations in the Netherlands, which are part of our Solar operating segment (the "Plan"). The goal of the Plan is to reduce operating costs and better align our workforce with the current needs of our solar business and enhance our competitive position for long-term success. Once fully implemented, we expect the Plan to reduce operating costs by approximately $3.0 million on an annualized basis. Under the Plan, we will reduce our Solar workforce by approximately 35-40 employees (approximately 20%). The affected employees are covered by a collective bargaining agreement, which defines the notice periods and amount due to employees in the event of involuntary termination.

The Company and its Chief Executive Officer and President, Fokko Pentinga, agreed on a transition of leadership, pursuant to which Mr. Pentinga stepped down as the Chief Executive Officer, President and a director of the Company effective December 6, 2018 (the "Effective Date"). In connection with his departure, Mr. Pentinga and the Company entered into a Separation Agreement and General Release of all Claims, dated November 28, 2018 (the "Separation Agreement"). Pursuant to the Separation Agreement, Mr. Pentinga will receive the following benefits:

- a severance payment of $864,000 in gross, less all customary and appropriate income and employment taxes;
- a payment of $458,500 for all other amounts due him;
- all of his time-based stock options (the "Options"), became fully vested and immediately exercisable. Mr. Pentinga has the right to exercise Options with an exercise price of $7.01 or less until December 31, 2019. The remaining Options are exercisable during the 90-day period following the Effective Date; and
- certain other benefits as set forth in the Separation Agreement.

The table below details the activity for three months ended December 31, 2018 related to the above restructuring actions and the outstanding obligations as of December 31, 2018, in thousands:

	Three Months Ended December 31, 2018
Balance at September 30, 2018	$ 865
Severance expense, net of adjustments	874
Cash payments	(275)
Balance at December 31, 2018	$ 1,464

4. Earnings Per Share

Basic earnings per share ("EPS") is computed by dividing net income (loss) by the weighted average number of common shares outstanding for the period. Diluted EPS is computed similarly to basic EPS except that the denominator is increased to include the number of additional common shares that would have been outstanding if potentially dilutive common shares had been issued. In the case of a net loss, diluted earnings per share is calculated in the same manner as basic EPS.

For the three months ended December 31, 2018 and December 31, 2017, options for 1,198,000 and 120,000 weighted average shares, respectively, were excluded from the diluted EPS calculations because they were anti-dilutive. These shares could become dilutive in the future.

A reconciliation of the denominators of the basic and diluted EPS calculations follows (in thousands, except per share amounts):

	Three Months Ended December 31, 2018	Three Months Ended December 31, 2017
Numerator:		
Net (loss) income attributable to Amtech Systems, Inc.	$ (2,372)	$ 6,452
Denominator:		
Weighted-average shares used to compute basic EPS	14,220	14,781
Common stock equivalents (1)	—	517
Weighted-average shares used to compute diluted EPS	14,220	15,298
Basic (loss) income per share attributable to Amtech shareholders	$ (0.17)	$ 0.44
Diluted (loss) income per share attributable to Amtech shareholders	$ (0.17)	$ 0.42

(1) The number of common stock equivalents is calculated using the treasury method and the average market price during the period.

5. Inventory

The components of inventories are as follows, in thousands:

	December 31, 2018	September 30, 2018
Purchased parts and raw materials	$ 14,840	$ 15,896
Work-in-process	6,311	6,067
Finished goods	2,657	2,747
	$ 23,808	$ 24,710

6. Equity and Stock-Based Compensation

Stock-based compensation expense was $0.2 million and $0.3 million in the three months ended December 31, 2018 and 2017, respectively, and was included in selling, general and administrative expenses.

The following table summarizes our stock option activity during the three months ended December 31, 2018:

	Options	Weighted Average Exercise Price
Outstanding at beginning of period	1,248,758	$ 7.69
Granted	154,850	5.52
Exercised	(10,984)	3.34
Forfeited	(66,940)	9.75
Outstanding at end of period	1,325,684	$ 7.37
Exercisable at end of period	1,095,001	$ 7.73
Weighted average fair value of options granted during the period	$ 3.18	

As a result of the Separation Agreement (see Note 3), vesting of 12,500 options was accelerated in the first quarter of 2019. Additionally, 122,500 options are subject to potential modification, if they are unexercised at the end of the 90-day period following the Effective Date. The modification will allow for an additional nine-month exercise period.

The fair value of options was estimated at the applicable grant date using the Black-Scholes option pricing model with the following assumptions:

	Three Months Ended December 31, 2018
Risk free interest rate	3%
Expected life	6 years
Dividend rate	0%
Volatility	60%

On November 29, 2018, we announced that the Board of Directors of Amtech Systems, Inc. (the "Board") approved a stock repurchase program, pursuant to which we may repurchase up to $4 million of our outstanding common stock, par value $0.01 per share, over a one-year period. Repurchases under the program will be made in open market transactions at prevailing market prices, in privately negotiated transactions, or by other means in compliance with the rules and regulations of the SEC; however, we have no obligation to repurchase shares and the timing, actual number, and value of shares to be repurchased is subject to management's discretion and will depend on the Company's stock price and other market conditions. Our Board may terminate the repurchase program at any time while it is in effect. We intend to retire any repurchased shares. There were no shares repurchased during the quarter ended December 31, 2018.

7. Income Taxes

For the three months ended December 31, 2018 and 2017, we recorded income tax expense of $0.6 million and $1.2 million, respectively. The quarterly income tax provision is calculated using an estimated annual effective tax rate, based upon expected annual income, permanent items, statutory rates and planned tax strategies in the various jurisdictions in which we operate. However, losses in certain jurisdictions and discrete items are treated separately.

Deferred tax assets and liabilities reflect the tax effects of temporary differences between the carrying value of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. We record a valuation allowance if, based on the weight of available evidence, it is more likely than not that some portion or all of a deferred tax asset will not be realized. Our expectations regarding realization of our deferred tax assets is based upon the weight of all available evidence, including such factors as our recent earnings history, expected future taxable income and available tax planning strategies. We established valuation allowances on substantially all net deferred tax assets, after considering all of the available objective evidence, both positive and negative, historical and prospective, with greater weight given to historical evidence, and determined it is not more likely than not that these assets will be realized.

We classify all of our uncertain tax positions as income taxes payable long-term. At both December 31, 2018 and September 30, 2018, the total amount of unrecognized tax benefits was approximately $1.2 million. Income taxes payable long-term includes other items, primarily withholding taxes that are not due until the related intercompany service fees are paid.

We classify interest and penalties related to unrecognized tax benefits as income tax expense. As of both December 31, 2018 and September 30, 2018, we had an accrual for potential interest and penalties of approximately $0.7 million classified with income taxes payable long-term.

Amtech and one or more of our subsidiaries file income tax returns in The Netherlands, Germany, France, China and other foreign jurisdictions, as well as in the U.S. and various states in the U.S. We have not signed any agreements with the Internal Revenue Service, any state or foreign jurisdiction to the extend the statute of limitations for any fiscal year. As such, the number of open years is the number of years dictated by statute in each of the respective taxing jurisdictions, which generally is from 3 to 5 years.

8. Commitments and Contingencies

Purchase Obligations – As of December 31, 2018, we had unrecorded purchase obligations in the amount of$16.0 million compared to $15.0 million as of September 30, 2018. These purchase obligations consist of outstanding purchase orders for goods and services. While the amount represents purchase agreements, the actual amounts to be paid may be less in the event that any agreements are renegotiated, canceled or terminated.

Legal Proceedings and Other Claims – From time to time, we are a party to claims and actions for matters arising out of our business operations. We regularly evaluate the status of the legal proceedings and other claims in which we are involved to assess whether a loss is probable or there is a reasonable possibility that a loss, or an additional loss, may have been incurred and determine if accruals are appropriate. If accruals are not appropriate, we further evaluate each legal proceeding to assess whether an estimate of possible loss or range of possible loss can be made for disclosure. Although the outcome of claims and litigation is inherently unpredictable, we believe that we have adequate provisions for any probable and estimable losses. It is possible, nevertheless, that our consolidated financial position, results of operations or liquidity could be materially and adversely affected in any particular period by the resolution of a claim or legal proceeding. Legal expenses related to defense, negotiations, settlements, rulings and advice of outside legal counsel are expensed as incurred.

In December 2018, we were notified by our customer that the turnkey contract for Phase II has been terminated. As a result, we will not perform the final installation and integration of our equipment. Final settlement of the contract is under review. We have removed the value of this remaining work from our backlog with no material effect on financial condition and results of operations.

Employment Contracts – We have employment contracts with, and severance plans covering, certain officers and management employees under which severance payments would become payable in the event of specified terminations without cause or terminations under certain circumstances after a change in control. If severance payments under the current employment contracts or severance plans were to become payable, the severance payments would generally range from twelve to thirty-six months of salary.

9. Business Segment Information

Our three reportable segments are as follows:

Solar – We are a leading supplier of thermal processing systems, including related automation, parts and services, to the solar/photovoltaic industry and also offer PECVD (plasma-enhanced chemical vapor deposition) equipment to the global solar market.

Semiconductor – We design, manufacture, sell and service thermal processing equipment and related controls for use by leading semiconductor manufacturers, and in electronics, automotive and other industries.

Polishing – We produce consumables and machinery for lapping (fine abrading) and polishing of materials, such as sapphire substrates, optical components, silicon wafers, numerous types of crystal materials, ceramics and metal components. We also refer to our Polishing segment as “SiC/LED.”

Information concerning our business segments is as follows, in thousands:

	Three Months Ended December 31, 2018	Three Months Ended December 31, 2017
Net Revenues:		
Solar *	$ 7,510	$ 49,197
Semiconductor	18,960	20,891
Polishing	2,983	3,523
	$ 29,453	$ 73,611
Operating (loss) income:		
Solar *	$ (2,804)	$ 5,352
Semiconductor	2,745	3,004
Polishing	769	1,104
Non-segment related	(2,626)	(1,694)
	$ (1,916)	$ 7,766

* The financial statement of business units included in the Solar segment include sales of equipment and parts to the semiconductor, silicon wafer and microelectromechanical (“MEMS”) industries, comprising not more than half of the Solar segment revenue.

	December 31, 2018	September 30, 2018
Identifiable Assets:		
Solar	$ 38,502	$ 48,898
Semiconductor	62,036	59,744
Polishing	7,178	6,545
Non-segment related*	33,207	34,219
	$ 140,923	$ 149,406

*Non-segment related assets include cash, property and other assets.

Goodwill and other long-lived assets

We review our long-lived assets, including goodwill, for impairment at least annually in our fourth quarter or whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Additional information on impairment testing of long-lived assets, intangible assets and goodwill can be found in Notes 1 and 5 of our Annual Report on Form 10-K for the year ended September 30, 2018.

10. Major Customers and Foreign Sales

During the three months ended December 31, 2018, one Semiconductor segment customer individually represented 13% of our net revenues. No other customer represented greater than 10% of net revenues. During the three months ended December 31, 2017, one Solar segment customer individually represented 50% of our net revenues.

Our net revenues were to customers in the following geographic regions:

	Three Months Ended December 31, 2018	Three Months Ended December 31, 2017
United States	20 %	7 %
Other	2 %	2 %
Total North America	**22 %**	**9 %**
China	30 %	71 %
Malaysia	3 %	3 %
Taiwan	8 %	2 %
Other	7 %	3 %
Total Asia	**48 %**	**79 %**
Germany	17 %	6 %
Other	13 %	6 %
Total Europe	**30 %**	**12 %**
	100 %	**100 %**

Item 2. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our “Condensed Consolidated Financial Statements” in Item 1 of this Quarterly Report on Form 10-Q (“Quarterly Report”) and our consolidated financial statements and related notes included in Item 8, “Financial Statements and Supplementary Data” in our Annual Report on Form 10-K for the fiscal year ended September 30, 2018.

Overview

We are a leading, global manufacturer of capital equipment, including thermal processing and wafer handling automation, and related consumables used in fabricating semiconductor devices, light-emitting diodes, or LEDs, silicon carbide ("SiC") and silicon power chips and solar cells. We sell these products to semiconductor and solar cell manufacturers worldwide, particularly in Asia, the United States and Europe. We operate in three reportable business segments, based primarily on the industry they serve: (i) Semiconductor, (ii) Polishing and (iii) Solar. In our Semiconductor segment, we supply thermal processing equipment, including solder reflow ovens, diffusion furnaces, and customer high-temp belt furnaces for use by semiconductor and electronics assembly manufacturers. In our Polishing segment, we produce substrate consumables and machinery for lapping (fine abrading) and polishing of materials, such as silicon wafers for semiconductor products, sapphire wafers for LED applications, compound substrates, like silicon carbide wafers, for power device applications. In our Solar segment, we supply thermal processing systems, including diffusion furnace, plasma-enhanced chemical vapor deposition ("PECVD") system, atomic layer deposition ("ALD") system, and related automation, to the photovoltaic solar industry.

Our semiconductor customers are primarily manufacturers of integrated circuits, O-S-D (optoelectronic, sensors and discrete) components used in analog, power and radio frequency (RF) devices and photovoltaic solar cells. The semiconductor and solar cell industries are cyclical and historically have experienced significant fluctuations. Our revenue is impacted by these broad industry trends. Although semiconductor demand for our products may have reached its cyclical peak in our fiscal year ended September 30, 2018, we believe that continued technological advances and emerging industries, such as silicon carbide power devices, will sustain our long-term performance.

Since 2012, the solar cell industry has, at times, experienced significant structural imbalances between supply and demand. This imbalance has increased competitive pressure on selling prices and negatively impacted our results of operations. We secured a large order for two phases of a solar turnkey project and delivered the equipment for both phases in fiscal 2017 and 2018. We achieved final acceptance for the first phase and have been waiting for end-customer readiness to begin installation of the second phase. In December 2018, we were notified by our customer that the turnkey contract for Phase II has been terminated. As a result, we will not perform the final installation and integration of our equipment. Final settlement of the contract is under review. We have removed the value of this remaining work from our backlog and do not expect any future orders relating to this project or other turnkey projects. For equipment orders for other customer expansions, we compete with Chinese equipment manufacturers that offer lower prices, liberal payment terms and have a more substantial local presence. As a result, we are finding it increasingly difficult to participate in large capacity expansion opportunities in China. We believe we will need to continue to significantly restructure our Solar operations to achieve profitability. No assurance can be given as to the outcome or timing of any such further restructuring efforts, or that any such efforts will result in any specific action. We are intensely reviewing available options to improve the solar business.

In July 2018, we established a restructuring plan related to our operations in the Netherlands, which are part of our Solar operating segment (the "Plan"). The goal of the Plan is to reduce operating costs and better align our workforce with the current needs of our solar business and enhance our competitive position for long-term success. Once fully implemented, we expect the Plan to reduce operating costs by approximately $3.0 million on an annualized basis. Under the Plan, we will reduce our Solar workforce by approximately 35-40 employees (approximately 20%). The affected employees are covered by a collective bargaining agreement, which defines the notice period and amount due to employees in the event of involuntary termination. We recorded approximately $0.9 million of one-time termination costs in the fourth quarter of fiscal 2018. It is expected that these efforts will be completed by the end of our third quarter of fiscal 2019.

Results of Operations

The following table sets forth certain operational data as a percentage of net revenue for the periods indicated:

	Three Months Ended December 31,	
	2018	2017
Net revenue	100 %	100 %
Cost of sales	69 %	72 %
Gross margin	31 %	28 %
Selling, general and administrative	28 %	14 %
Research, development and engineering	7 %	3 %
Restructuring charges	3 %	0 %
Operating (loss) income	(7)%	11 %
Loss from equity method investment	0 %	0 %
Interest expense and other income, net	1 %	0 %
(Loss) Income before income taxes	(6)%	11 %
Income tax provision	2 %	2 %
Net (loss) income	(8)%	9 %

Net Revenue

Net revenue consists of revenue recognized upon shipment or installation of equipment, with the exception of products using new technology, for which revenue is recognized upon customer acceptance. Spare parts sales are recognized upon shipment and service revenue is recognized upon completion of the service activity, which is generally ratable over the term of the service contract. Since the majority of our revenue is generated from large system sales, revenue and operating income can be significantly impacted by the timing of system shipments and system acceptances. The revenue of business units included in the Solar segment include sales of equipment and parts to the semiconductor, silicon wafer and MEMS industries, comprising not more than half of the Solar segment revenue.

Our net revenue by operating segment was as follows (dollars in thousands):

	Three Months Ended December 31,			
Segment	2018	2017	Incr (Decr)	% Change
Solar	$ 7,510	$ 49,197	$ (41,687)	(85)%
Semiconductor	18,960	20,891	(1,931)	(9)%
Polishing	2,983	3,523	(540)	(15)%
Total net revenue	$ 29,453	$ 73,611	$ (44,158)	(60)%

Total net revenue for the quarters ended December 31, 2018 and 2017 was $29.5 million and $73.6 million, respectively, a decrease of approximately $44.2 million or 60%. Revenue from the Solar segment decreased 85% compared to the prior year quarter. This change is primarily a result of shipments of the equipment for Phase II of the turnkey order during the prior year quarter, compared to no turnkey revenue in the most recent quarter. We are operating in a challenging, competitive environment due to lower prices and liberal payment terms that are offered from Chinese equipment manufacturers. These competitive pricing pressures are making it increasingly difficult for us to participate in our customers' solar expansions. The termination of the turnkey contract described in the Overview section above further reduces our confidence in the likelihood of a rebound of our Solar segment. Revenue from our Semiconductor segment decreased 9% compared to the prior year quarter due primarily to market demand peaking in fiscal 2018 and weakness in the China consumer market. Revenue from the Polishing segment decreased 15% compared to the prior year quarter due primarily to more machine sales and higher initial sales of a new template design in the first quarter of fiscal 2018.

Backlog and Orders

Our backlog, including deferred profit, as ofDecember 31, 2018 and 2017 was as follows (dollars in thousands):

	Three Months Ended December 31,			
Segment	2018	2017	Incr (Decr)	% Change
Solar	$ 19,664	$ 39,267	$ (19,603)	(50)%
Semiconductor	18,158	23,720	(5,562)	(23)%
Polishing	3,456	2,864	592	21%
Total backlog	$ 41,278	$ 65,851	$ (24,573)	(37)%

The backlog of business units included in the Solar segment include sales of equipment and parts to the semiconductor, silicon wafer and MEMS industries, comprising not more than half of the Solar segment backlog.

New orders booked in the three months ended December 31, 2018 and 2017 were as follows (dollars in thousands):

	Three Months Ended December 31,			
Segment	2018	2017	Incr (Decr)	% Change
Solar	$ 4,866	$ 7,332	$ (2,466)	(34)%
Semiconductor	16,094	25,292	(9,198)	(36)%
Polishing	3,744	4,701	(957)	(20)%
Total new orders	$ 24,704	$ 37,325	$ (12,621)	(34)%

As of December 31, 2018, one customer individually accounted for 17% of our backlog. No other customer accounted for more than 10% of our backlog as ofDecember 31, 2018. The orders included in our backlog are generally credit approved customer purchase orders believed to be firm and are generally expected to ship within the next twelve months. 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 profit from completing these orders. Our backlog also includes revenue deferred pursuant to our revenue recognition policy.

Gross Profit and Gross Margin

Gross profit is the difference between net revenue and cost of goods sold. Cost of goods sold consists of purchased material, labor and overhead to manufacture equipment and spare parts and the cost of service and support to customers for installation, warranty and paid service calls. Gross margin is gross profit as a percent of net revenue. Our gross profit and gross margin by operating segment were as follows (dollars in thousands):

	Three Months Ended December 31,				
Segment	2018	Gross Margin	2017	Gross Margin	Incr (Decr)
Solar	$ 411	5%	$ 11,313	23%	$ (10,902)
Semiconductor	7,490	40%	7,488	36%	2
Polishing	1,224	41%	1,536	44%	(312)
Total gross profit	$ 9,125	31%	$ 20,337	28%	$ (11,212)

Gross profit for the three months ended December 31, 2018 and 2017 was $9.1 million (31% of net revenue) and $20.3 million (28% of net revenue), respectively, a decrease of $11.2 million. Gross margin on products from our Solar segment decreased compared to the three months ended December 31, 2017, due primarily to lower sales volumes and write-downs of inventory. Gross margin on products from our Semiconductor segment increased compared to the three months ended December 31, 2017, due primarily to a higher margin product mix. Gross margin on products from our Polishing segment decreased from the prior year period, primarily due to product mix. For the three months ended December 31, 2018, we recognized previously deferred gross profit of $0.5 million. For the three months ended December 31, 2017, we deferred gross profit of $2.1 million.

Selling, General and Administrative

Selling, general and administrative expenses ("SG&A") consists of the cost of employees, consultants and contractors, facility costs, sales commissions, shipping costs, promotional marketing expenses, legal and accounting expenses and bad debt expense.

SG&A expenses for the three months ended December 31, 2018 and 2017 were $8.2 million and $10.6 million, respectively. SG&A decreased compared to the prior year quarter due primarily to decreased expenses in our Solar segment, including lower commissions and freight on lower sales, lower personnel and other employee-related expenses, and administrative expenses related to the turnkey project that were incurred in the first quarter of fiscal 2018.

Restructuring Charges

We recorded restructuring charges of $0.9 million in the first quarter of fiscal 2019. This amount is primarily severance expense related to the departure of our former Chief Executive Officer.

Research, Development and Engineering

Research, development and engineering ("RD&E") expenses consist of the cost of employees, consultants and contractors who design, engineer and develop new products and processes as well as materials and supplies used in producing prototypes. We receive governmental research and development grants which are netted against these expenses when certain conditions have been met.

RD&E expense, net of grants earned, for the three months ended December 31, 2018 and 2017 were $1.9 million and $2.0 million, respectively, a decrease of less than $100,000.

Income Taxes

For the three months ended December 31, 2018 and 2017, we recorded income tax expense of $0.6 million and $1.2 million, respectively. The income tax provisions are based upon estimates of annual income, annual permanent differences and statutory tax rates in the various jurisdictions in which we operate, except that certain loss jurisdictions and discrete items are treated separately.

Generally accepted accounting principles require that a valuation allowance be established when it is "more likely than not" that all or a portion of deferred tax assets will not be realized. A review of all available positive and negative evidence needs to be considered, including a company's performance, the market environment in which the company operates and the length of carryback and carryforward periods. According to those principles, it is difficult to conclude that a valuation allowance is not needed when the negative evidence includes cumulative losses in recent years. Therefore, in the first quarter of fiscal 2019, cumulative losses in the Solar segment weighed heavily in the overall assessment. As a result of the review, it was determined that it was appropriate to maintain a full valuation allowance for all net deferred tax assets in the foreign jurisdictions in which the Solar segment has operations, and for the carryforwards of U.S. net operating losses and foreign tax credits, acquired in the merger with BTU International, for which there are limitations on their utilization. We continue to monitor our cumulative income and loss positions in the U.S. and foreign jurisdictions to determine whether full valuation allowances on net deferred tax assets are appropriate.

Our future effective income tax rate depends on various factors, such as the amount of income (loss) in each tax jurisdiction, tax regulations governing each region, non-tax deductible expenses incurred as a percent of pre-tax income and the effectiveness of our tax planning strategies.

Liquidity and Capital Resources

The following table sets forth for the periods presented certain consolidated cash flow information (in thousands):

	Three Months Ended December 31,	
	2018	2017
Net cash used in operating activities	$ (646)	$ (14,622)
Net cash used in investing activities	(152)	(93)
Net cash (used in) provided by financing activities	(58)	1,110
Effect of exchange rate changes on cash	(662)	453
Net decrease in cash, cash equivalents and restricted cash	(1,518)	(13,152)
Cash, cash equivalents and restricted cash, beginning of period	62,496	75,761
Cash, cash equivalents and restricted cash, end of period	$ 60,978	$ 62,609

Cash and Cash Flow

The decrease in cash, cash equivalents and restricted cash during the firstthree months of fiscal 2019 of $1.5 million was primarily due to cash used in operations and the effect of exchange rates on our cash balances. We maintain a portion of our cash, cash equivalents and restricted cash in Euros at our Dutch and French operations and in RMB in our Chinese operations; therefore, changes in the exchange rate have an impact on our cash balances. Our working capital was $77.0 million as of December 31, 2018 and $79.1 million as of September 30, 2018. Our ratio of current assets to current liabilities was 3.0:1 as of December 31, 2018, and 2.8:1 as of September 30, 2018.

The success of our growth strategy is dependent upon the availability of additional capital resources on terms satisfactory to management. Our sources of capital in the past have included the sale of equity securities, which includes common stock sold in private transactions and public offerings, long-term debt and customer deposits. There can be no assurance that we can raise such additional capital resources on satisfactory terms. We believe that our principal sources of liquidity discussed above are sufficient to support operations for at least the next twelve months. We have never paid dividends on our common stock.

Cash Flows from Operating Activities

Cash used in our operating activities was $0.6 million for the three months ended December 31, 2018, compared to $14.6 million for the three months ended December 31, 2017, an increase of $14.0 million. During the three months ended December 31, 2018, $1.0 million was used in losses from operations adjusted for non-cash items, partially offset by $0.4 million of cash provided by changes in operating assets and liabilities. During the three months ended December 31, 2017, cash was primarily generated through net income adjusted for non-cash items of $7.4 million and increases in current liabilities, such as customer deposits and accounts payable. These increases were more than offset by an increase in accounts receivable due to the high volumes of shipments during the quarter and advances made to vendors.

Cash Flows from Investing Activities

For the three months ended December 31, 2018, cash used in investing activities was $0.2 million compared to $0.1 million in the prior year period.

Cash Flows from Financing Activities

For the three months ended December 31, 2018, $0.1 million of cash used in financing activities was comprised of approximately $37,000 of proceeds received from the exercise of stock options, fully offset by payments on long-term debt of $0.1 million. For the three months ended December 31, 2017, $1.1 million of cash provided by financing activities was primarily comprised of $1.2 million of proceeds from the exercise of stock options, partially offset by payments on long-term debt of less than $0.1 million.

Off-Balance Sheet Arrangements

As of December 31, 2018, we had no off-balance sheet arrangements as defined in Item 303(a)(4) of Regulation S-K promulgated by the SEC that have or are reasonably likely to have a current or future effect on financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that are material to investors.

Contractual Obligations

Unrecorded purchase obligations were $16.0 million as of December 31, 2018, compared to $15.0 million as of September 30, 2018, an increase of $1.0 million due primarily to inventory builds related to expected shipments in the second quarter and a large capital expenditure in our Polishing segment.

There were no other material changes to the contractual obligations included in Part II, Item 7: “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of our Annual Report on Form 10-K for the year ended September 30, 2018.

Critical Accounting Policies

Part I, Item 2: “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of this Quarterly Report discusses our condensed consolidated financial statements that have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amount of assets and liabilities at the date of the condensed consolidated financial statements, the disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and the reported amounts of revenue and expenses during the reporting period.

On an ongoing basis, we evaluate our estimates and judgments, including those related to revenue recognition, inventory valuation, accounts and notes receivable collectability, warranty and impairment of long-lived assets. We base our estimates and judgments on historical experience and on various other factors that we believe to be reasonable under the circumstances. The results of these estimates and judgments form the basis for making conclusions about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

A critical accounting policy is one that is both important to the presentation of our financial position and results of operations, and requires management’s most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. These uncertainties are discussed in Part I, Item 1A of our Annual Report on Form 10-K for the year ended September 30, 2018. We believe our critical accounting policies relate to the more significant judgments and estimates used in the preparation of our consolidated financial statements.

We believe the critical accounting policies discussed in the section entitled “Item 7: Management’s Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies” in our Annual Report on Form 10-K for the fiscal year ended September 30, 2018 represent the most significant judgments and estimates used in the preparation of our consolidated financial statements. Other than the Revenue Recognition policy change disclosed in Note 2 hereto, there have been no significant changes in our critical accounting policies during the three months ended December 31, 2018.

Impact of Recently Issued Accounting Pronouncements

For discussion of the impact of recently issued accounting pronouncements, see “Part I, Item 1: Financial Information” under “Impact of Recently Issued Accounting Pronouncements.”

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

As a smaller reporting company, as defined by Rule 12b-2 of the Exchange Act and in Item 10(f)(1) of Regulation S-K, we are electing scaled disclosure reporting obligations and, therefore, are not required to provide the information requested by this Item.

Item 4. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, including our Chief Executive Officer (“CEO”) and our Chief Financial Officer (“CFO”), has carried out an evaluation of the effectiveness of our disclosure controls and procedures as of December 31, 2018, pursuant to Exchange Act Rules 13a-15(e) and 15(d)-15(e). Disclosure controls and procedures means controls and other procedures that are designed to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to management, including the principal executive and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure. Based upon that evaluation, our CEO and CFO have concluded that as of such date, our disclosure controls and procedures in place were effective.

Changes in Internal Control Over Financial Reporting

There have not been any changes in the Company’s internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the first fiscal quarter to which this report relates that materially affected, or are reasonably likely to materially affect, the internal control over financial reporting of the Company.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

For discussion of legal proceedings, see Note 8 to our consolidated financial statements under "Part I, Item 1: Financial Information" under "Commitments and Contingencies" of this Quarterly Report.

Item 1A. Risk Factors

There have been no material changes to the risk factors as previously disclosed in the section entitled "Risk Factors" of our Form 10-K for the fiscal year ended September 30, 2018.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

Issuer Purchases of Equity Securities

On November 29, 2018, we announced that our Board approved a stock repurchase program, pursuant to which we may repurchase up to $4 million of our outstanding common stock, par value $0.01 per share, over a one-year period, commencing immediately. Repurchases under the program will be made in open market transactions at prevailing market prices, in privately negotiated transactions, or by other means in compliance with the rules and regulations of the SEC; however, we have no obligation to repurchase shares and the timing, actual number, and value of shares to be repurchased is subject to management's discretion and will depend on the Company's stock price and other market conditions. We may, in the sole discretion of the Board, terminate the repurchase program at any time while it is in effect. We intend to retire any repurchased shares.

During the three months ended December 31, 2018, we did not repurchase any of our equity securities nor did we sell any equity securities that were not registered under the Securities Act of 1933, as amended.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

EXHIBIT NO.	EXHIBIT DESCRIPTION	INCORPORATED BY REFERENCE FORM	FILE NO.	EXHIBIT NO.	FILING DATE	FILED HEREWITH
10.1	Separation Agreement and General Release of All Claims between Amtech Systems, Inc. and Fokko Pentinga dated November 28, 2018					X
10.2	Letter Agreement between Amtech Systems, Inc. and Fokko Pentinga dated December 28, 2018					X
31.1	Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as Amended					X
31.2	Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as Amended					X
32.1	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
101.INS	XBRL Instance Document					X
101.SCH	XBRL Taxonomy Extension Schema Document					X
101.PRE	Taxonomy Presentation Linkbase Document					X
101.CAL	XBRL Taxonomy Calculation Linkbase Document					X
101.LAB	XBRL Taxonomy Label Linkbase Document					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					X

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

AMTECH SYSTEMS, INC.

By /s/ Lisa D. Gibbs	Dated: February 7, 2019
Lisa D. Gibbs	
Vice President – Chief Accounting Officer	
(Principal Accounting Officer and Duly Authorized Officer)	

Exhibit 10.1

SEPARATION AGREEMENT
AND GENERAL RELEASE OF ALL CLAIMS

This Separation Agreement and General Release of All Claims ("Separation Agreement") is made by and between Amtech Systems, Inc., an Arizona corporation (the "Company"), and Fokko Pentinga ("Executive") with respect to the following facts:

A. Executive is currently employed by the Company pursuant to that Employment Agreement dated June 29, 2012, as amended by that certain Amendment to Employment Agreement dated July 1, 2012, Second Amendment to Employment Agreement dated June 28, 2013, Third Amendment to Employment Agreement dated November 18, 2014, Fourth Amendment to Employment Agreement dated April 9, 2015, and Fifth Amendment to Employment Agreement dated November 10, 2016 (as amended, the "Employment Agreement"), pursuant to which the Company engaged Executive to serve in the capacity of Chief Executive Officer of the Company.

B. Executive currently serves as a Director of the Company and in the positions of the Company and its subsidiaries listed on Exhibit A1 attached hereto (collectively, the "Affiliate Positions").

C. The parties have different views on how the Company's business should be conducted. The Parties have discussed their differences and came to the conclusion that a successful cooperation in the future is no longer feasible and that are no suitable positions within the Company's organization or any of the Company's subsidiaries.

D. In view of the above, the parties entered into discussions on the terms and conditions of an amicable settlement on the termination of the Employment Agreement as well as any other issues there may be.

E. The Company confirms that the termination of the Employment Agreement is triggered on its initiative; that there is no urgent cause for such termination within the meaning of article 7:678 of the Dutch Civil Code and that the Executive is not to blame in this respect.

F. The Executive has sought and obtained legal advice on the content of this Separation Agreement and the consequences thereof.

G. The parties now desire to settle all claims and issues that have, or could have been raised, by Executive in relation to Executive's employment with the Company and the Affiliate Positions arising out of or in any way related to the acts, transactions or occurrences between Executive and the Company or between Executive and any of the companies listed on Exhibit A1 to date, including, but not limited to, Executive's employment with the Company and the Affiliate Positions, or the termination of Executive's employment with the Company and the Affiliate Positions, on the terms set forth below.

THEREFORE, in consideration of the promises and mutual agreements hereinafter set forth, it is agreed by and between the undersigned as follows:

1. Termination. The Employment Agreement shall terminate with mutual consent with effect from December 6, 2018 (“Separation Date”). The Executive hereby resigns as a Director of the Company and from the Affiliate Positions with effect from the Separation Date and, for those Affiliate Positions which require such, effectuated by means of the resignation letter listed in Exhibit A2, to be signed simultaneous with this Separation Agreement.

2. Severance Package. In exchange for the promises set forth herein, the Company agrees to provide Executive with the following benefits (“Severance Package”). Executive acknowledges and agrees that this Severance Package is compensation that he is not otherwise entitled and constitutes adequate legal consideration for the promises and representations made by Executive in this Separation Agreement. Executive agrees that except for the Severance Package, he is not entitled to any other or further compensation, wages, bonuses or payments of any kind from the Company.

(a) Severance Payment. The Company agrees to provide Executive with a severance payment of $864,000 gross, less all customary and appropriate income and employment taxes (collectively, the “Severance Payment”). The severance amount is equal to two years of the Executive’s salary and a settlement of $50,000 of the fiscal 2019 bonus. The Company agrees that eighty percent (80%) of Severance Payment will be paid by one of its Dutch affiliates in the amount of €610,942 ($864,000 x 80% ÷ 1.131367), but will remain liable for the full Severance Payment until paid.

(b) Section 409A Compliance. Executive agrees and acknowledges that his separation is a “separation from service” (as defined in Section 409A of the Internal Revenue Code (“Section 409A”)). Executive further acknowledges and agrees that he is a “specified employee” within the meaning of Section 409A and the Company’s specified employee identification policy and that the Severance Payment constitutes nonqualified deferred compensation within the meaning of Section 409A. As a result, Executive’s Severance Payment shall be postponed and not be paid or provided to Executive during the six (6)-month period following the Separation Date, and such postponed payment shall be paid to the Executive in a single lump sum within thirty (30) days after the date that is six (6) months following the Executive’s separation from service, unless Executive’s death occurs earlier and, in such case, then to Executive’s designated beneficiary within thirty (30) days after the date of the Executive's death.

(c) Other Amounts Due: The Company will pay the Executive $458,500 for all other amounts due him. Exhibit B to this Agreement sets forth all other amounts which the Executive and the Company agree are all to which the Executive is entitled and will be paid within 15 days after the Separation Date. If it is determined that any other amounts are due the Executive as of the Separation Date, the Executive agrees to accept a lower amount in lieu of the amount designated as vacation, such that the total of all amounts to which the Executive may be entitled as of the date of separation will remain $458,500. The Company agrees that eighty percent (80%) of this amount paid by one of its Dutch affiliates in amount of €324,210 ($458,500 x 80% ÷ 1.131367), but will remain liable for the full amount until paid.

3. Equity-Based Awards. As of the Effective Date of this Separation Agreement, Executive holds the following equity-based awards an aggregate of 264,167 shares of common stock underlying previously granted stock options that are subject to time based vesting (the "Time Based Stock Options**").**

3.1 Treatment of Stock Options. The Time Based Stock Options shall become fully (100%) vested and shall become immediately exercisable. Executive (or his estate) shall have the right to exercise 122,500 of such options with an exercise price of $7.01 or less during the period following the Effective Date of this Separation Agreement until December 31, 2019 and the remaining 141,667 of the Time Based options during the 90-day period following the Effective Date of this Separation Agreement.

4. General Release.

4.1 Payment of the Severance Payment shall constitute adequate legal consideration for Executive's general release and related promises described in this paragraph 4, and for Executive's representation concerning the filing of legal actions described in paragraph 5 below. Executive unconditionally, irrevocably and absolutely releases and discharges the Company, and any parent and subsidiary corporations, divisions and affiliated corporations, partnerships or other affiliated entities of the Company, past and present, as well as the Company's employees, officers, directors, stockholders, lawyers, agents, successors and assigns (collectively, "Released Parties"), from all claims related in any way to the transactions or occurrences between them to date, to the fullest extent permitted by law, including, but not limited to, Executive's employment with the Company and with each affiliate of the Company, the termination of Executive's employment and each of the Affiliate Positions, and all other losses, liabilities, claims, charges, demands and causes of action, known or unknown, suspected or unsuspected, arising directly or indirectly out of or in any way connected with Executive's employment with the Company and each of the Affiliate Positions. This release is intended to have the broadest possible application and includes, but is not limited to, any tort, contract, common law, constitutional or other statutory claims, including, but not limited to, alleged violations of the Age Discrimination in Employment Act of 1967, as amended, the Family and Medical Leave Act, the Americans with Disabilities Act, Title 7.10 of the Dutch Civil Code and all claims for attorneys' fees, costs and expenses.

4.2 By signing this Agreement, Executive acknowledges and represents that he (a) has suffered no injuries or occupational diseases arising out of or in connection with his employment with the Company; (b) have received all leave to which he was entitled, if any, under the Family and Medical Leave Act of 1993 ("FMLA") and any applicable federal, state or local leave laws; and (c) are not aware of any facts or circumstances constituting a violation of the FMLA, and/or the Fair Labor Standards Act or any other federal, state or local laws pertaining to the payment of wages.

4.3 Executive expressly waives Executive's right to recovery of any type, including damages or reinstatement, in any administrative or court action, whether state or federal, and whether brought by Executive or on Executive's behalf, related in any way to the matters released herein.

4.4 The parties acknowledge that this general release is not intended to bar any claims that, by statute, may not be waived, such as Executive's right to file a charge with the National Labor Relations Board or Equal Employment Opportunity Commission and other similar government agencies, and claims for workers' compensation or unemployment insurance benefits, as applicable, any challenge to the validity of Executive's release of claims under the Age Discrimination in Employment Act of 1967, as amended ("ADEA") and rights or claims that may arise under the ADEA after the date of execution of this release.

4.5 Executive acknowledges that Executive may discover facts or law different from, or in addition to, the facts or law that Executive knows or believes to be true with respect to the claims released in this Separation Agreement and agrees, nonetheless, that this Separation Agreement and the release contained in it shall be and remain effective in all respects notwithstanding such different or additional facts or the discovery of them.

4.6 Executive declares and represents that Executive intends this Separation Agreement to be complete and not subject to any claim of mistake, that the release herein expresses a full and complete release, and Executive intends the release herein to be final and complete. Executive executes this release with the full knowledge that this release covers all possible claims against the Released Parties, to the fullest extent permitted by law.

4.7 The Company unconditionally, irrevocably and absolutely releases and discharges Executive from all claims the Company has against Executive related in any way to the transactions or occurrences between them to date, to the fullest extent permitted by law, including, but not limited to, claims related to Executive's employment with the Company and with each affiliate of the Company, and all other losses, liabilities, claims, charges, demands and causes of action, known to the Company as of the Effective Date, arising directly or indirectly out of or in any way connected with Executive's employment with the Company and each of the Affiliate Positions. For purposes of clarification only, Executive understands and agrees that the Company's release set forth in this Section 4.7 is not intended to, and shall not cover, any claims made after the Effective Date that relate to matters the Company has no current actual knowledge of as of the Effective Date.

5 . Representation Concerning Filing of Legal Actions. Executive represents that, as of the date of this Separation Agreement, Executive has not filed any lawsuits, charges, complaints, petitions, claims or other accusatory pleadings against the Company or the other Released Parties, in any court or with any governmental agency. Executive agrees that, to the fullest extent permitted by law, Executive will not prosecute, nor allow to be prosecuted on Executive's behalf, in any administrative agency, whether state or federal, or in any court, whether state or federal, any claim or demand of any type related to the matters released in this Separation Agreement, provided, however, nothing in this Section 5 shall be construed to mean that Executive cannot bring claims against the Company for breach of its obligations under this Agreement.

6. Nondisparagement. Executive agrees that Executive will not make any written or verbal statements, or encourage others to make any such statements, that defame, disparage or criticize the personal or business reputation, practices or conduct of the Company or any of the other Released Parties, or that disrupts or impairs the Company's normal, ongoing business operations. Executive understand that this provision does not apply on occasions when Executive is subpoenaed or ordered by a court or other governmental authority to testify or give evidence and must respond truthfully. Executive further agrees not to otherwise interfere with the Company's business operations.

7. No Cooperation. Executive agrees that he will not act in any manner that might damage the business of the Company. Executive agree that he will not counsel or assist any attorneys or their clients in the presentation or prosecution of any disputes, differences, grievances, claims, charges or complaints by any third party, including any family member of Executive, against the Company or any officer, director, employee, agent, representative, or attorney of the Company, unless under a subpoena or other court order to do so. Executive further agrees both to immediately notify the Company upon receipt of any court order, subpoena or any legal discovery device that seeks or might require the disclosure or production of the existence or terms of this Agreement, and to furnish, within three (3) business days of its receipt, a copy of such subpoena or legal discovery device to the Company.

8. Return of the Company Property. Executive understands and agrees that as a condition of receiving the Severance Package in paragraph 1, all the Company property must be returned to the Company upon the request of any officer of the Company. By signing this Separation Agreement, Executive agrees that Executive will not dispose of any Company property without written consent of an officer of the Company and will not use or disclose to others any confidential or proprietary information of the Company or the other Released Parties.

9. Continuing Obligations. Executive further agrees to comply with the continuing obligations set forth in the Employment Agreement. Executive further acknowledges and agrees that, should Executive fail to comply with Executive's obligations under this Separation Agreement (including any continuing obligations under the Employment Agreement), the Company has no obligation to continue to provide the benefits contemplated under paragraph 1 of this Separation Agreement and Executive's release shall remain valid and enforceable.

10. Older Workers' Benefit Protection Act. This Separation Agreement is intended to satisfy the requirements of the Older Workers' Benefit Protection Act, 29 U.S.C. sec. 626(f). Executive is advised to consult with an attorney before executing this Separation Agreement.

10.1 Acknowledgments/Time to Consider. Executive acknowledges and agrees that (a) Executive has read and understands the terms of this Separation Agreement; (b) Executive has been advised in writing to consult with an attorney before executing this Separation Agreement; (c) Executive has obtained and considered such legal counsel as Executive deems necessary; (d) Executive has been given twenty-one (21) days to consider whether or not to enter into this Separation Agreement (although Executive may elect not to use the full 21-day period at Executive's option); and (e) by signing this Separation Agreement, Executive acknowledges that Executive does so freely, knowingly and voluntarily.

10.2 Revocation/Effective Date. This Separation Agreement shall be executed by Executive no later than November 28, 2018, or otherwise is null and void. To the extent timely executed by Executive, this Separation Agreement shall not become effective or enforceable until the eighth (8th) day after Executive signs this Separation Agreement. In other words, Executive may revoke Executive's acceptance of this Separation Agreement within seven (7) days after the date Executive signs it. Executive's revocation must be in writing and received by Robert T. Hass, Chief Financial Officer, on or before the seventh day in order to be effective. If Executive does not revoke acceptance within the seven (7) day period, Executive's acceptance of this Separation Agreement shall become binding and enforceable on the eighth day ("Effective Date"). The Severance Package will become due in accordance with paragraph 1 above after the Effective Date, provided Executive does not revoke.

10.3 Preserved Rights of Executive. This Separation Agreement does not waive or release any rights or claims that Executive may have under ADEA that arise after the execution of this Separation Agreement. In addition, this Agreement does not prohibit Executive from challenging the validity of this Separation Agreement's waiver and release of claims under the ADEA, as amended.

11. No Admissions. By entering into this Separation Agreement, the Company and the other Released Parties make no admission that they have engaged, or are now engaging, in any unlawful conduct. The parties understand and acknowledge that this Separation Agreement is not an admission of liability and shall not be used or construed as such in any legal or administrative proceeding.

12. Executive agrees to cooperate fully in the transition of Executive's duties. Executive understands and agrees that while most of the transition will take place prior to the Separation Date, the Company may, from time to time, after the Separation Date, require Executive's assistance at reasonable times and at reasonable places with transitional matters. After termination of the Employment Agreement, the Executive shall remain available for assistance and defense in any proceedings against the Company and its affiliated companies, which relate to the period during which the Executive was a statutory director of the Company or held the Affiliate Positions. The reasonable expense of the Executive shall, upon proper receipt of written invoices, be compensated by the Company.

13. Code Section 409A. It is intended that any amounts payable under this Separation Agreement and the Company's exercise of authority or discretion hereunder shall comply with and avoid the imputation of any tax, penalty or interest under Section 409A of the United States Internal Revenue Code of 1986, as amended (including the Treasury Regulations and other published guidance related thereto) ("Section 409A"). This Separation Agreement shall be construed and interpreted consistent with that intent. This provision shall not be construed as a guarantee by the Company of any particular tax effect to Executive under this Separation Agreement. The Company shall not be liable to Executive for any payment made under this Separation Agreement that is determined to result in an additional tax, penalty, or interest under

Section 409A, nor for reporting in good faith any payment made under this Separation Agreement as an amount includible in gross income under Section 409A.

14. Full Defense. This Separation Agreement may be pled as a full and complete defense to, and may be used as a basis for an injunction against, any action, suit or other proceeding that may be prosecuted, instituted or attempted by the parties in breach hereof.

15. Applicable Law; Venue. The validity, interpretation and performance of this Separation Agreement shall be construed and interpreted according to the laws of the United States of America and the State of Arizona. The parties agree that any action brought by either party to interpret or enforce any provision of this Separation Agreement or surviving provisions of the Employment Agreement shall be brought in, and each party agrees to, and does hereby, submit to the jurisdiction and venue of, the appropriate state or federal court in Maricopa County, Arizona, where the Company is headquartered. THE PARTIES TO THIS AGREEMENT HEREBY WAIVE THEIR RIGHT TO A TRIAL BY JURY WITH RESPECT TO DISPUTES ARISING UNDER THIS AGREEMENT AND THE RELATED AGREEMENTS AND CONSENT TO A BENCH TRIAL WITH THE APPROPRIATE JUDGE ACTING AS THE FINDER OF FACT.

16. Notices. All notices, requests, demands and other communications called for hereunder will be in writing and will be deemed given (i) on the date of delivery if delivered personally, (ii) one (1) day after being sent by a well-established commercial overnight service, or (iii) two (2) days after being mailed by registered or certified mail, return receipt requested, prepaid and addressed to the parties or their successors at the addresses set forth on the signature page hereto, or at such other addresses as the parties may later designate in writing.

17. Counterparts; Facsimiles. This Separation Agreement may be executed in separate counterparts, each of which is deemed to be an original and all of which taken together constitute one and the same agreement, and such counterparts may be delivered via facsimile.

18. Successors and Assigns. To the extent permitted by state law, the Company may assign this Agreement to any subsidiary or corporate affiliate, or to any successor or assign (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company. This Agreement shall inure to the benefit of the Company and permitted successors and assigns. Executive may not assign this Separation Agreement or any part hereof, provided, however, should Executive die before the Company has fulfilled all of its obligations hereunder, the Company hereby agrees that it shall make any remaining payments otherwise due under this Agreement to Executive's spouse. Any purported assignment by Executive shall be null and void from the initial date of purported assignment.

19. Attorneys' Fees and Costs. Each party to this Agreement will be responsible for payment of all reasonable attorneys' fees and costs that the such party incurred in connection with the negotiation of this Agreement and in the course of enforcing the terms of the Separation Agreement, including demonstrating the existence of a breach and any other contract enforcement efforts.

20. Severability. Should any provision of this Agreement be held by a court of competent jurisdiction to be enforceable only if modified, or if any portion of this Agreement shall be held as unenforceable and thus stricken, such holding shall not affect the validity of the remainder of this Agreement, the balance of which shall continue to be binding upon the parties with any such modification to become a part hereof and treated as though originally set forth in this Agreement. The parties further agree that any such court is expressly authorized to modify any such unenforceable provision of this Agreement in lieu of severing such unenforceable provision from this Agreement in its entirety, whether by rewriting the offending provision, deleting any or all of the offending provision, adding additional language to this Agreement, or by making such other modifications as it deems warranted to carry out the intent and agreement of the parties as embodied herein to the maximum extent permitted by law. The parties expressly agree that this Agreement as so modified by the court shall be binding upon and enforceable against each of them.

21. Entire Agreement; Modification. This Separation Agreement, including the surviving provisions of the Employment Agreement, is intended to be the entire agreement between the parties and supersede and cancel any and all other and prior agreements, written or oral, between the parties regarding this subject matter. This Separation Agreement may be amended only by a written instrument executed by all parties hereto. The parties agree that any rule pertaining to the construction of contracts to the effect that ambiguities are to be resolved against the drafting party shall not apply to the interpretation of this Agreement. The language in all parts of this Agreement shall be interpreted according to its fair meaning and, specifically, shall not be interpreted strictly for or against any of the parties released in this Agreement.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

THE PARTIES TO THIS SEPARATION AGREEMENT HAVE READ THE FOREGOING SEPARATION AGREEMENT AND FULLY UNDERSTAND EACH AND EVERY PROVISION CONTAINED HEREIN. WHEREFORE, THE PARTIES HAVE EXECUTED THIS SEPARATION AGREEMENT ON THE DATES SHOWN BELOW.

Dated: November 28, 2018 /s/ Fokko Pentinga
Fokko Pentinga

AMTECH SYSTEMS, INC.

Dated: November 28, 2018 By: /s/ Robert T. Hass
Name: Robert T. Hass
Title: Vice President and CFO

Exhibit 10.1

EXHIBIT A1

Omitted due to immateriality

EXHIBIT A2

RESIGNATION AS STATUTORY DIRECTOR

Omitted due to immateriality

Exhibit B

Payment of Other Amounts Due

		Total		20% Pay-out from U.S.A.		80% Pay-out from the Netherlands @ FX 1.131367
						1.131367
1. Salary through December 5, 2018	$	27,500	$	5,500	€	19,446
2. Accrued vacation	$	162,719	$	32,544	€	115,060
3. Fiscal 2018 bonus	$	122,500	$	24,500	€	86,621
4. Settlement of 4 months notice	$	135,000	$	27,000	€	95,460
5. Car allowance	$	2,781	$	556	€	1,966
6. Accrued holiday pay	$	8,000	$	1,600	€	5,657
Total by currency	$	458,500	$	91,700	€	324,210
Total in USD	$	458,500	$	91,700	$	366,800

Exhibit 10.2

Amtech Systems, Inc.
131 South Clark Drive
Tempe, Arizona 85281

December 28, 2018

Fokko Pentinga

RE: Separation Agreement dated December 6, 2018, between Amtech Systems, Inc. (the "Company") and Fokko Pentinga (the "Separation Agreement").

Dear Mr. Pentinga:

This letter agreement shall serve to reflect the agreement between you and the Company to amend the Separation Agreement to provide that your employment with any subsidiary of the Company in the Netherlands shall terminate effective December 31, 2018 rather than December 6, 2018, as previously referenced in the Separation Agreement.

Except as specifically provided above, all other terms set forth in the Separation Agreement shall remain in full force and effect.

Your signature in the space set forth below shall evidence your agreement to the foregoing.

Sincerely,
Amtech Systems, Inc.

/s/ Robert T. Hass

Robert T. Hass
Vice President & CFO

ACKNOWLEDGED AND AGREED TO:

_/s/ Fokko Pentinga___________________________________

Fokko Pentinga

284389517.1

Exhibit 31.1

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES
CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a)
OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Jong S. Whang, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Amtech Systems, Inc. (the "registrant"),

2. Based on my knowledge, this quarterly report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this quarterly report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this quarterly report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

By /s/ Jong S. Whang
Jong S. Whang
Executive Chairman, Chairman of the Board and Chief Executive Officer
Amtech Systems, Inc.
Date: February 7, 2019

Exhibit 31.2

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES
CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a)
OF THE SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Robert T. Hass, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Amtech Systems, Inc. (the "registrant"),

2. Based on my knowledge, this quarterly report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this quarterly report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this quarterly report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

By /s/ Robert T. Hass
Robert T. Hass
Vice President – Finance and Chief Financial Officer
Amtech Systems, Inc.
Date: February 7, 2019

Exhibit 32.1

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Amtech Systems, Inc. (the "Company") on Form 10-Q for the period ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Jong S. Whang, Executive Chairman, Chairman of the Board and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By /s/ Jong S. Whang
Jong S. Whang
Executive Chairman, Chairman of the Board and Chief Executive Officer

Amtech Systems, Inc.
Date: February 7, 2019

The foregoing certification is being furnished pursuant to 18 U.S.C. Section 1350. It is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and it is not to be incorporated by reference into any filing of the Company, regardless of any general incorporation language in such filing.

Exhibit 32.2

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Amtech Systems, Inc. (the "Company") on Form 10-Q for the period ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Robert T. Hass, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. sections 1350, as adopted pursuant to sections 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

By /s/ Robert T. Hass
Robert T. Hass
Vice President – Finance and Chief Financial Officer
Amtech Systems, Inc.
Date: February 7, 2019

The foregoing certification is being furnished pursuant to 18 U.S.C. Section 1350. It is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and it is not to be incorporated by reference into any filing of the Company, regardless of any general incorporation language in such filing.