PATENT ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Advanced Energy Industries, Inc.	09/29/2010

RECEIVING PARTY DATA

Name:	Hitachi Metals, Ltd.
Street Address:	2-1, Shibaura 1-chome,
City:	Minato-ku, Toyko
State/Country:	JAPAN
Postal Code:	105-8614

PROPERTY NUMBERS Total: 35

Property Type	Number
Patent Number:	7651263
Patent Number:	7640078
Patent Number:	5099881
Patent Number:	5251871
Patent Number:	5967489
Patent Number:	5988210
Patent Number:	6006701
Patent Number:	6062256
Patent Number:	6230731
Patent Number:	6237635
Patent Number:	6604493
Patent Number:	7355320
Patent Number:	7394639
Patent Number:	7599163
Patent Number:	7603186

CH $1400.00 7651263

Application Number:	11407837
Application Number:	11994696
Application Number:	12238879
Application Number:	12250205
Application Number:	12356661
Application Number:	12494970
Application Number:	12502918
Application Number:	12540055
Application Number:	12549142
Application Number:	12561834
Application Number:	12757582
Application Number:	12757574
Application Number:	12768583
Application Number:	12797753
PCT Number:	US0767593
PCT Number:	US0772563
PCT Number:	US0766880
PCT Number:	US0960415
PCT Number:	US0957966
PCT Number:	US0953678

CORRESPONDENCE DATA

Fax Number: (720)536-4910
Correspondence will be sent via US Mail when the fax attempt is unsuccessful.
Phone: 720-536-4900
Email: sean@nodiplaw.com
Correspondent Name: Neugeboren O'Dowd PC
Address Line 1: 1227 Spruce Street
Address Line 2: 200
Address Line 4: Boulder, COLORADO 80302

ATTORNEY DOCKET NUMBER:	AEI_TO_HML ASSIGNMENT
NAME OF SUBMITTER:	Sean R. O'Dowd

Total Attachments: 10
source=Intellectual Property Assignment Agreement_10282010#page1.tif
source=Intellectual Property Assignment Agreement_10282010#page2.tif
source=Intellectual Property Assignment Agreement_10282010#page3.tif
source=Intellectual Property Assignment Agreement_10282010#page4.tif
source=Intellectual Property Assignment Agreement_10282010#page5.tif

source=Intellectual Property Assignment Agreement_10282010#page6.tif
source=Intellectual Property Assignment Agreement_10282010#page7.tif
source=Intellectual Property Assignment Agreement_10282010#page8.tif
source=Intellectual Property Assignment Agreement_10282010#page9.tif
source=Intellectual Property Assignment Agreement_10282010#page10.tif

INTELLECTUAL PROPERTY ASSIGNMENT AGREEMENT

This INTELLECTUAL PROPERTY ASSIGNMENT AGREEMENT ("**Agreement**"), effective October 15, 2010 (the "**Effective Date**"), is entered into by and between Hitachi Metals, Ltd, a Japanese corporation (together with any successors, legal representatives of assigns thereof, "**Assignee**"), and Advanced Energy Industries, Inc. a Delaware corporation ("**Parent**", together with certain of its Subsidiaries, "**Assignor**").

WHEREAS, Assignee and Parent are parties to that certain Asset Purchase Agreement (the "**Asset Purchase Agreement**") dated as of July 21, 2010, pursuant to which Assignee acquired certain assets of Assignor, including, but not limited to, certain intellectual property rights; and

WHEREAS, Assignee has agreed to accept and assume from Assignor all right, title and interest of Assignor in and to the intellectual property rights set forth on Schedule A hereto and Assignor desires to assign the same to Assignee. Capitalized terms used but not otherwise defined herein shall have the meaning given such terms in the Asset Purchase Agreement.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, the parties agree as follows:

1. Assignment. Assignor hereby assigns, transfers and conveys to Assignee, and Assignee accepts, all of Assignor's right, title and interest throughout the world in and to the following (collectively, "**Rights**"):

(i) all patents and patent applications set forth on Schedule A hereto, any and all patents that are or may be granted therefrom, and any and all other existing and later-filed patents and patent applications claiming priority therefrom, whether in the United States or any other country or jurisdiction, including, without limitation, any continuations, continuations-in-part, divisions, substitutions, reissuances, reexaminations, renewals, revisions, extensions and foreign counterparts thereof;

(ii) all trademarks, service marks, trade names, domain names, logos, and trade dress set forth on Schedule A hereto, together with all translations, adaptations, derivations and combinations thereof, including all registrations and applications for registration in the United States or any other country or jurisdiction pertaining to the same, and any common law rights therein and goodwill associated therewith;

(iii) all copyrighted or copyrightable works set forth on Schedule A hereto, including all copyright registrations or applications therefor (along with any rights of renewal or extension) in the United States or any other country or jurisdiction;

(iv) all other Seller Owned Intellectual Property **other than Excluded Intellectual Property**; and

(v) all rights and privileges pertaining to the subject matter of subsections (i) through (iv), including, without limitation, all causes of action, claims, demands presently or hereafter

accruing with respect to the same, including the right to sue or bring other actions for past, present and future infringement thereof anywhere in the world.

If any Rights (including, without limitation, moral rights) cannot be assigned, Assignor hereby waives enforcement anywhere in the world of such Right against Assignee, its distributors, licensees and customers or, if necessary, agrees to exclusively license (with the right to sublicense through multiple tiers) worldwide, and hereby does grant a worldwide, perpetual, irrevocable, sublicenseable (through multiple tiers), transferable, assignable license, without additional consideration, to Assignee for any and all such rights Assignor may have in and to the Rights or any portion thereof.

2. Protection. Assignor further assigns all rights, and empowers Assignee, its successors, assigns and nominees, to make applications for patent, trademark, copyright or other intellectual property registration or protection anywhere in the world, to claim and receive the benefit of any applicable rights of priority in connection with such applications, to prosecute such applications to issue, and to have any and all registrations issued in the name of Assignee.

3. Further Assurances. Assignor further agrees that Assignor will execute, verify, acknowledge and deliver all such further papers, including applications and instruments of transfer; and perform such other acts as Assignee lawfully and reasonably may request, to facilitate Assignee's right to obtain, protect, maintain, defend or enforce any of the Rights granted hereunder. In the event that Assignee is unable for any reason whatsoever to secure Assignor's signature to any document when so required to effectuate fully this Agreement, Assignor hereby irrevocably designates and appoints Assignee and Assignee's duly authorized officers and agents, as Assignor's agents and attorneys-in-fact to act for and on its behalf and instead of it, to execute and file any such document and to do all other lawfully permitted acts to further the purposes of the foregoing, with the same legal force and effect as if executed by Assignor (it being acknowledged that such appointment is irrevocable and a power coupled with an interest).

4. General.

(i) *Relationship of the Parties.* Notwithstanding any provision hereof, for all purposes of this Agreement each party will be and act as an independent contractor and must not bind nor attempt to bind the other in any manner.

(ii) *Waiver.* The failure of a party to require performance by another party of any provision hereof will not affect the full right to require such performance at any time thereafter; nor will the waiver by either party of a breach of any provision hereof be taken or held to be a waiver of the provision itself.

(iii) *Severability.* If any provision of this Agreement is held to be illegal or unenforceable, such provision will be limited or eliminated to the minimum extent necessary so that the remainder of this Agreement will continue in full force and effect and enforceable.

(iv) *Controlling Law, Jurisdiction.* This Agreement will be interpreted and controlled by and construed and enforced according to the laws of the state of California without regard to conflicts of laws provisions thereof. The parties specifically submit themselves to the jurisdiction

of the state and federal courts sitting in San Francisco County, California and each agrees that said courts have the sole and exclusive jurisdiction over any and all disputes and causes of action between them. Both parties agree that process may be served in the manner provided herein for giving of notices or otherwise as allowed by California or U.S. federal law.

(v) *Subject to Asset Purchase Agreement; Modification.* This Agreement is being executed pursuant to the Asset Purchase Agreement and is subject to the terms and conditions contained in the Asset Purchase Agreement. This Agreement may not be changed, modified, discharged or terminated in any manner other than by a written agreement signed by the parties to this Agreement or their respective successors and assigns.

(vi) *Governing Law.* This Intellectual Property Assignment Agreement shall be governed by and interpreted and enforced in accordance with the Laws of the State of California, without giving effect to any choice of Law or conflict of Laws rules or provisions (whether of the State of California or any other jurisdiction) that would cause the application of the Laws of any jurisdiction other than the State of California

(vii) *Counterparts.* This Intellectual Property Assignment Agreement may be executed in number of counterparts, and any party hereto may execute any such counterpart, each of which when executed and delivered shall be deemed to be an original, and all of which counterparts taken together shall constitute but one and the same instrument. This Intellectual Property Assignment Agreement shall become effective when each party hereto shall have received a counterpart hereof signed by the other party hereto. The parties agree that the delivery of this Intellectual Property Assignment Agreement may be effected by means of an exchange of facsimile or electronically transferred signatures.

SIGNATURE PAGE NEXT PAGE

IN WITNESS WHEREOF, the undersigned has caused this Intellectual Property Assignment Agreement to be executed by the signature of its duly authorized officer as of the date above first written.

Advanced Energy Industries, Inc.

By: _____
Name: Tom McGimpsey
Title: Vice President

Advanced Energy Japan, K.K.

By: _____
Name: Tom McGimpsey
Title: Vice President/Director

Hitachi Metals, Ltd.

By: _____
Name:
Title:

STATE OF Colorado)
)
COUNTY OF Larimer)

On September 29, 2010, before the undersigned, a Notary Public for the State and County aforesaid, personally appeared Tom McCampsey, known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the above assignment, and acknowledged that he/she as Vice President of Advanced Energy Industries Inc, a Delaware corporation, being authorized to do so, executed the same by signing the name of the corporation by himself/herself as Vice President.

Jennifer K. Anderson
Notary Public

JENNIFER K. ANDERSON NOTARY PUBLIC STATE OF COLORADO

My Commission Expires 09/23/2013

DB1/64989278.3
\\BO - 020736/000025 - 213416 v3

IN WITNESS WHEREOF, the undersigned has caused this Intellectual Property Assignment Agreement to be executed by the signature of its duly authorized officer as of the date above first written.

Advanced Energy Industries, Inc.

By: _____
Name:
Title:

Advanced Energy Japan, K.K.

By: _____
Name:
Title:

Hitachi Metals, Ltd.

By: _____
Name:
Title:

SCHEDULE A
ASSIGNED INTELLECTUAL PROPERTY RIGHTS

MFC-Related United States Patents

Filing/Issue Date	Country of Filing	Patent / Application No.	Title	AEI Docket No.
1. 1/26/2010	United States	7,651,263	Method and Apparatus for Measuring the Temperature of a Gas in a Mass Flow Controller	AE2005-012
2. 12/29/2009	United States	7,640,078	Multi-Mode Control Algorithm	AE2005-028
3. 3/31/1992	United States	5,099,881	Flow Dividing Structure of Mass Flow Controller	AE1991-002
4. 10/12/1993	United States	5,251,871	Fluid Flow Control Valve and Valve Disk	AE1993-003
5. 10/19/1999	United States	5,967,489	Fluid Control Apparatus	AE1997-007
6. 11/23/1999	United States	5,988,210	Flow Control Valve Utilizing Sonic Nozzle	AE1997-008
7. 12/28/1999	United States	6,006,701	Vaporizer in a Liquid Material Vaporizing and Feeding Apparatus	AE1998-004
8. 5/16/2000	United States	6,062,256	Micro Mass Flow Control Apparatus and Method	AE1997-010
9. 5/15/2001	United States	6,230,731	Valve Closure Seating Method and Apparatus	AE2001-026
10. 5/29/2001	United States	6,237,635 B1	Exhauster Pressure Control System	AE2000-004
11. 8/12/2003	United States	6,604,493 B1	Liquid Material Vaporizing and Feeding Apparatus	AE2002-047
12. 4/8/2008	United States	7,355,320	Reactive Load Resonant Drive Circuit	AE2004-044
13. 7/1/2008	United States	7,394,639	System and Method for Driving an Industrial Control Device	AE2005-019
14. 10/6/2009	United States	7,599,163	System and Method for Driving an Industrial Control Device	AE2005-019CON
15. 10/13/2009	United States	7,603,186	Adaptive Response Time Closed Loop Control Algorithm	AE2005-027

MFC-Related United States Pending Applications

(Including all United States family member patents and applications and foreign counterpart patents and applications to the below-listed pending United States patent applications.)

Filing/Issue Date	Country of Filing	Patent / Application No.	Title	AEI Docket No.
1. 4/20/2006	United States	11/407,837	Flow Controller Delivery of a Specified Quantity of a Fluid	AE2005-029
2. 6/12/2008	United States	11/994,696	Exhaust Apparatus Pressure Control System	AE2006-017
3. 9/26/2008	United States	12/238,879	Method and System for Operating a Mass Flow Controller	AE2008-008
4. 10/13/2008	United States	12/250,205	Mass Flow Controller and Method of Operating the Same	AE2007-019
5. 1/21/2009	United States	12/356,661	Mass Flow Controller Hysteresis Compensation System and Method	AE2007-020
6. 6/30/2009	United States	12/494,970	Thermal Flow Sensor with Zero Drift Compensation	AE2008-022
7. 7/14/2009	United States	12/502,918	Thermal Mass Flow Sensor with improved response across fluid types	AE2008-014

Filing/Issue Date	Country of Filing	Patent / Application No.	Title	AEI Docket No.
8. 8/12/2009	United States	12/540,055	System and Method for Monitoring Control Status of an Exhaust Apparatus Pressure Control System	AE2008-012US
9. 8/27/2009	United States	12/549,142	Multi-Mode Control Loop with Improved Performance for Mass Flow Controller	AE2008-015
10. 9/17/2009	United States	12/561,834	Temperature Insensitive Mass Flow Controller	AE2007-018
11. 4/9/2010	United States	12/757,582	Method and Mass Flow Controller for Enhanced Operating Range	8. AE2008-029
12. 4/9/2010	United States	12/757,574	Mass Flow Controller with Enhanced Operating Range	7. AE2008-027
13. 4/27/2010	United States	12/768,583	Method and System of On-Tool and On-Site MFC Optimization Providing Consistent Response	AE2009-019US
14. 6/10/2010	United States	12/797,753	Adaptive On-Tool Mass Flow Controller Tuning	AE2010-004US

MFC-Related Foreign Applications

(Including all United States family member patents and applications and foreign counterpart patents and applications to the below-listed foreign patent applications.)

Filing/Issue Date	Country of Filing	Patent / Application No.	Title	AEI Docket No.
1. Done Filed: 4/27/2007 Serial #: US07/67593	PCT	Done Filed: 4/27/2007 Serial #: US07/67593	Adaptive Response Time Closed Loop Control Algorithm	AE2005-027_PCT
2. Done Filed: 6/29/2007 Serial #: US2007/072563	PCT	Done Filed: 6/29/2007 Serial #: US2007/072563	Multi-Mode Control Algorithm	AE2005-028_PCT
3. Done Filed: 4/18/2007 Serial #: US/2007/066880	PCT	Done Filed: 4/18/2007 Serial #: US/2007/066880	Flow Controller Delivery of a Specified Quantity of a Fluid	AE2005-029_PCT
4. Pending Filed: 10/13/2009 Serial #: US09/060415	PCT	Pending Filed: 10/13/2009 Serial #: US09/060415	Mass Flow Controller and Method of Operating the Same	AE2007-019_PCT
5. Pending Filed: 9/23/2009 Serial #: US09/57966	PCT	Pending Filed: 9/23/2009 Serial #: US09/57966	Method and System for Operating a Mass Flow Controller	AE2008-008_PCT
6. Pending Filed: 8/13/2009 Serial #: PCT/US09/53678	PCT	Pending Filed: 8/13/2009 Serial #: PCT/US09/53678	System and Method for Monitoring Control Status of an Exhaust Apparatus Pressure Control System	AE2008-012US_PCT
7. Filed: 2/28/2008	Japan	App. #: 2009-551850	Method and Apparatus for Measuring the Temperature of a Gas in a Mass Flow Controller	5. AE2005-012_JPN
8. Filed: 8/28/2008	China	App. #: 2008-80040691	Method and Apparatus for Measuring the Temperature of a Gas in a Mass Flow Controller	6. AE2005-012CHN
9. Filed: 2/28/2008	Republic of Korea	App. #: 10-2009-7020234	Method and Apparatus for Measuring the Temperature of a	7. AE2005-012KOR

Filing/Issue Date	Country of Filing	Patent / Application No.	Title	AEI Docket No.
			Gas in a Mass Flow Controller	
10. Filed: 7/7/2006	China	App. #: 200680032621.1	System and Method for Driving an Industrial Control Device	13. AE2005-019CHN
11. Filed: 7/7/2006	Japan	App. #: 2008-520392	System and Method for Driving an Industrial Control Device	14. AE2005-019JPN
12. Filed: 2/4/2008	Republic of Korea	App. #: 10-2008-7003009	System and Method for Driving an Industrial Control Device	15. AE2005-019KOREA
13. Filed: 4/27/2007	China	App. #: 200780019535.1	Adaptive Response Time Closed Loop Control Algorithm	16. AE2005-027CHN
14. Filed: 10/24/2008	EPO	App. #: 07761420.4	Adaptive Response Time Closed Loop Control Algorithm	17. AE2005-027EUR
15. Filed: 4/27/2007	Japan	App. #: 2009-507977	Adaptive Response Time Closed Loop Control Algorithm	18. AE2005-027JAPAN
16. Filed: 11/28/2008	Republic of Korea	App. #: 10-2008-7029193	Adaptive Response Time Closed Loop Control Algorithm	19. AE2005-027KOR
17. Filed: 6/11/2007	Taiwan	App. #: 96121084	Adaptive Response Time Closed Loop Control Algorithm	20. AE2005-027TAIWAN
18. Filed: 6/29/2007	China	Filed: 6/29/2007 App. #: 200780025529.7	Multi-Mode Control Algorithm	21. AE2005-028_CHINA
19. Filed: 7/3/2007	Taiwan	App. #: 96124185	Multi-Mode Control Algorithm	22. AE2005-028_TAIWAN
20. Filed: 12/25/2008	Japan	App. #: 2009-518591	Multi-Mode Control Algorithm	23. AE2005-028JPN
21. Filed: 1/16/2009	Republic of Korea	App. #: 10-2009-7000887	Multi-Mode Control Algorithm	24. AE2005-028KOR
22. Filed: 4/18/2007	China	App. #: 200780021560.3	Flow Controller Delivery of a Specified Quantity of a Fluid	25. AE2005-029CHINA
23. Filed: 4/18/2007	EPO	App. #: EP2007-760850	Flow Controller Delivery of a Specified Quantity of a Fluid	26. AE2005-029EUR
24. Filed: 4/18/2007	Japan	App. #: 2009-506745	Flow Controller Delivery of a Specified Quantity of a Fluid	27. AE2005-029JPN
25. Filed: 11/3/2008	Republic of Korea	App. #: 10-2008-7026894	Flow Controller Delivery of a Specified Quantity of a Fluid	28. AE2005-029KOR
26. Filed: 6/11/2007	Taiwan	App. #: 96121078	Flow Controller Delivery of a Specified Quantity of a Fluid	29. AE2005-029TAIWAN
27. Filed: 12/27/2008	EPO	App. #: 06785737.5	Exhaust Apparatus Pressure Control System	30. AE2006_017EPO
28. Filed: 1/11/2008	Republic of Korea	App. #: 10-2008-7000834	Exhaust Apparatus Pressure Control System	31. AE2006_017KOR
29. Filed 10/12/2009		App. no. 98134468	Mass Flow Controller and Method of Operating the Same	32. AE2007-019_TAIWAN

Filing/Issue Date	Country of Filing	Patent / Application No.	Title	AEI Docket No.
30. Filed: 8/14/2009		App. #: 98127369	System and Method for Monitoring Control Status of an Exhaust Apparatus Pressure Control System	33. AE2008-012TWN

MFC-Related Invention Disclosures

Submission Date	Country	Patent/ Application No.	Title	AEI Docket No.
4/18/2007	N/A	N/A	Self Aligning Integrated Semiconductor Sensor Assembly for Mass Flow Controller Bypass Tube	1. AE2007-009DISC
4/27/2007	N/A	N/A	Single-Stage Piezoelectric Actuator Driver	2. AE2007-010DISC
6/19/2007	N/A	N/A	Combined Inline Bypass Sensor Assembly	3. AE2007-015DISC
8/22/2008	N/A	N/A	4 Winding Thermal Mass Flow Sensor Using Existing Wire Winding Technology	4. AE2008-020DISC
8/28/2008	N/A	N/A	Thermal Balance Adjustment of a Thermal Mass Flow Sensor by Means of an Electrical Signal	5. AE2008-021DISC
12/5/2008	N/A	N/A	Flow Readback filter for Mass Flow Controller	6. AE2008-026DISC
1/6/2009	N/A	N/A	Portable MFC Valve Override Device	9. AE2009-001DISC
2/12/2010	N/A	N/A	Adaptive Pressure-Insensitive MFC Algorithm for Multi-Gas Applications	AE2010-007DISC

MFC-Related Registered Trademarks

Mark	Country	Reg. No.	Registration Date	International Class
AERA	US	1,881,216	Renewed 2/28/2005	9
AERA	France	92 430995	Renewed 5/30/2002	9
AERA	Germany	2,096,521	Renewed 9/19/2002	
LINEUP	US	3,560,137	1/13/2009	37
MACH ONE	US	3,061,540	2/28/2006	9
NEURALSTEP	US	3,148,803	9/26/2006	9
PI-980	US	3,141,999	9/12/2006	9
TRANSFORMER	US	3,780,101	4/27/2010	9
TRANSFORMER	Intl.	1,013,803	9/2/2009	9

MFC-Related Unregistered Trademarks

Mole Mode™

Open Source Software

OpenTCP Stack - written by Jari Lahti of Viola Systems