

PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

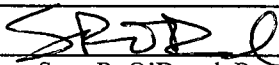
SUBMISSION TYPE:	NEW ASSIGNMENT				
NATURE OF CONVEYANCE:	ASSIGNMENT				
EFFECTIVE DATE:	11/01/2006				
CONVEYING PARTY DATA					
<table border="1"><tr><td>Name</td><td>Execution Date</td></tr><tr><td>Joshua Brian Pankratz</td><td>11/01/2006</td></tr></table>		Name	Execution Date	Joshua Brian Pankratz	11/01/2006
Name	Execution Date				
Joshua Brian Pankratz	11/01/2006				
RECEIVING PARTY DATA					
Name:	Advanced Energy Industries, Inc.				
Street Address:	1625 Sharp Point Drive				
Internal Address:	Attn: J. D. Pirnot, Esq.				
City:	Fort Collins				
State/Country:	COLORADO				
Postal Code:	80525				
PROPERTY NUMBERS Total: 1					
<table border="1"><tr><td>Property Type</td><td>Number</td></tr><tr><td>Application Number:</td><td>11531599</td></tr></table>		Property Type	Number	Application Number:	11531599
Property Type	Number				
Application Number:	11531599				
CORRESPONDENCE DATA					
Fax Number: (202)842-7899 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>					
Phone: 7205664035					
Email: sbitler@cooley.com					
Correspondent Name: Cooley Godward Kronish LLP					
Address Line 1: The Bowen Bldg., 875 15th St NW #800					
Address Line 2: Attn: Sean R. O'Dowd					
Address Line 4: Washington, DISTRICT OF COLUMBIA 20005-2221					
ATTORNEY DOCKET NUMBER:	ADEN01500US/AE2006009				
NAME OF SUBMITTER:	Sean R. O'Dowd, Reg. No. 53403				
Total Attachments: 4					

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Form PTO-1595 (Rev. 08/05) (Rev. 10/02) OMB No. 0651-0027 (exp. 6/30/2008)	RECORDATION FORM COVER SHEET PATENTS ONLY	U.S. DEPARTMENT OF COMMERCE U.S. Patent and Trademark Office
To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.		
1. Name of conveying party(ies): Joshua Brian Pankratz Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		2. Name and address of receiving party(ies) Name: Advanced Energy Industries, Inc. Internal Address: Street Address: 1625 Sharp Point Drive City: Ft. Collins State: CO Zip: 80525 Additional name(s) & address(es) attached? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
3. Nature of conveyance/Execution Date(s): Execution Date(s): 11/01/2006 <input checked="" type="checkbox"/> Assignment <input type="checkbox"/> Merger <input type="checkbox"/> Security Agreement <input type="checkbox"/> Change of Name <input type="checkbox"/> Joint Research Agreement <input type="checkbox"/> Government Interest Assignment <input type="checkbox"/> Executive Order 9424, Confirmatory License <input type="checkbox"/> Other ()		
4. Application number(s) or patent number(s): <input type="checkbox"/> This document is being filed together with a new application.		
A. Patent Application No.(s) 11/531,599		B. Patent No.(s)
Additional numbers attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
5. Name and address of party to whom correspondence concerning document should be mailed: COOLEY GODWARD KRONISH LLP Patent Group Street Address: The Bowen Building, 875 15 th St. NW, Ste. 800 City: Washington State: DC Zip: 20005-2221		6. Total number of applications and patents involved: [1] 7. Total fee (37 CFR 1.21(h) & 3.41).....\$40.00 <input type="checkbox"/> Enclosed <input checked="" type="checkbox"/> Authorized to be charged to deposit account
		8. Deposit account number: 50-1283 The Commissioner is hereby authorized to charge any appropriate fees under 37 CFR 3.41 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283. This paper is submitted in duplicate.
DO NOT USE THIS SPACE		
9. Signature: 		Date: November 13, 2006
Name of Person Signing: Sean R. O'Dowd, Reg. No. 53,403		
Total number of pages including cover sheet, attachments, and documents: [4]		

Attorney Docket No: ADEN-015/00US/AE2006-009

PATENT

ASSIGNMENT

Joshua Brian Pankratz, residing at 2312 Moss Rose Lane, Fort Collins, CO 80526 (referred to as "Assignor") has made an invention(s) (the "Invention(s)") set forth in an application for patent of the United States, entitled

SYSTEM AND METHOD FOR MANAGING POWER SUPPLIED TO A PLASMA CHAMBER

and which is a:

- (1) ☐ provisional application
 - (a) ☐ to be filed herewith; or
 - (b) ☐ bearing Application No. , and filed on ; or
- (2) ☒ non-provisional application
 - (a) ☐ to be filed herewith; or
 - (b) ☒ bearing Application No. 11/531,599, and filed on September 13, 2006.
 - (c)

WHEREAS, ADVANCED ENERGY INDUSTRIES, INC., a corporation duly organized under and pursuant to the laws of Delaware, and having its principal place of business at 1625 Sharp Point Drive, Fort Collins, CO 80525 (the "Assignee"), is desirous of acquiring the entire right, title, and interest in: the Invention(s); the application for patent identified in paragraph (1) or (2); the right to file applications for patent of the United States or other countries on the Invention(s); any application(s) for patent of the United States or other countries claiming priority to these application(s); any provisional or other right to recover damages, including royalties, for prior infringements of these applications; and any patent(s) of the United States or other countries that may be granted therefor or thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, and to the extent that the Assignor has not done so already via a prior agreement with the Assignee, or if the Assignor has already done so via a prior agreement with the Assignee then in confirmation of any obligation to do so in said prior agreement, the Assignor has sold, assigned, transferred, and set over, and by these presents does sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns, the Assignor's entire right, title, and interest in:

- (a) the Invention(s);
- (b) the application for patent identified in paragraph (1) or (2);
- (c) the right to file applications for patent of the United States or other countries on the Invention(s), including all rights under the Hague Convention, the Paris Convention for the Protection of Industrial Property, and under the Patent Cooperation Treaty;
- (d) any application(s) for patent of the United States or other countries claiming the Invention(s);

- (e) any application(s) for patent of the United States or other countries claiming priority to the application for patent identified in paragraph (1) or (2) or any application(s) for patent claiming the Invention(s), including any division(s), continuation(s), and continuation(s)-in-part;
- (f) any provisional or other right to recover damages, including royalties, for prior infringements of any application for patent identified in the preceding paragraphs (b)-(e); and
- (g) any patent(s) of the United States or other countries that may be granted for or on any application for patent identified in the preceding paragraphs (b) – (e), including any reissue(s) and extension(s) of said patent(s).

The above-granted rights, titles, and interests are to be held and enjoyed by the Assignee, for its own use and behalf and the use and behalf of its successors, legal representatives, and assigns, as fully and entirely as the same would have been held and enjoyed by the Assignor had this sale and assignment not been made.

The Assignor hereby represents to the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, or if applicable, at such time said prior agreement was executed, the Assignor is the sole and lawful owner of the entire right, title, and interest in and to the Invention(s), that the Invention(s) are unencumbered, except, if applicable, by obligation to assign in accordance with said prior agreement, and that the Assignor has good and full right and lawful authority to sell and convey the same in the manner set forth herein.

The Assignor hereby covenants and agrees to and with the Assignee, its successors, legal representatives, and assigns, that the Assignor will sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done in connection with any and all proceedings for the procurement, maintenance, enforcement and defense of the Invention(s), said applications, and said patents, including interference proceedings, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns.

The Assignor hereby authorizes and requests the attorneys of COOLEY GODWARD KRONISH L.L.P. to insert in the spaces provided above the filing date, the application number, and the attorney docket number of the application identified in paragraph (1) or (2) when known.

The Assignor hereby requests the Commissioner of Patents to issue said patents of the United States to the Assignee for the sole use and behalf of the Assignee, its successors, legal representatives, and assigns.

Date: 01 November 2006

By: _____

Joshua Brian PankratzState of Colorado)

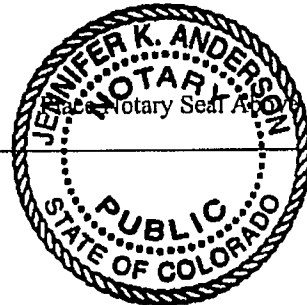
ss.

County of Larimer)

On Nov. 1, 2006, before me, Jennifer K. Anderson, personally appeared Joshua B. Pankratz, personally known to me or proved to me on the basis of satisfactory evidence, to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Jennifer K. Anderson
Signature of Notary Public
My Commission Expires: 9/23/09



My Commission Expires 09/23/2009