

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Jihun Oh</td> <td>03/07/2011</td> </tr> <tr> <td>Howard M. Branz</td> <td>03/07/2011</td> </tr> <tr> <td>Hao-Chih Yuan</td> <td>03/07/2011</td> </tr> </tbody> </table>		Name	Execution Date	Jihun Oh	03/07/2011	Howard M. Branz	03/07/2011	Hao-Chih Yuan	03/07/2011		
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<table border="1"> <tr> <td>Name:</td> <td>Alliance for Sustainable Energy, LLC</td> </tr> <tr> <td>Street Address:</td> <td>15013 Denver West Parkway</td> </tr> <tr> <td>City:</td> <td>Golden</td> </tr> <tr> <td>State/Country:</td> <td>COLORADO</td> </tr> <tr> <td>Postal Code:</td> <td>80401</td> </tr> </table>		Name:	Alliance for Sustainable Energy, LLC	Street Address:	15013 Denver West Parkway	City:	Golden	State/Country:	COLORADO	Postal Code:	80401
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PROPERTY NUMBERS Total: 1											
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>PCT Number:</td> <td>US2011027479</td> </tr> </tbody> </table>		Property Type	Number	PCT Number:	US2011027479						
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CORRESPONDENCE DATA											
Fax Number: 3033847499 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> Phone: (303) 384-7575 Email: joy.reinhart@nrel.gov Correspondent Name: Paul J. White Assoc General Counsel NREL Address Line 1: 15013 Denver West Parkway Address Line 2: MS 5231 Address Line 4: Golden, COLORADO 80401											
ATTORNEY DOCKET NUMBER:	NREL 11-43										
NAME OF SUBMITTER:	Paul J. White, Reg. No. 30,436										
Signature:	/Paul J. White/										

Date:

08/27/2013

Total Attachments: 2

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ASSIGNMENT

WHEREAS, we, Jihun Oh, Howard M. Branz, and Hao-Chih Yuan ("Inventors"), having invented a certain new and useful Invention entitled "Efficient Black Silicon Photovoltaic Devices with Enhanced Blue Response," an application for Letters Patent for which was filed on March 8, 2011, receiving International Application No. PCT/US11/27479, said application also being identified as NREL IR No. PCT/11-43 ("Invention"), and;

WHEREAS, the Alliance for Sustainable Energy, LLC, of 1617 Cole Boulevard, Golden, CO 80401 USA ("Alliance"), a corporation fully organized and existing under the laws of the State of Delaware is desirous of securing the entire right, title, and interest in and to this Invention in all countries throughout the world, and in and to the application for United States Letters Patent on this Invention and the Letters Patent to be issued upon this application;

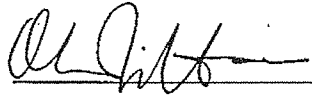
NOW THEREFORE, be it known that we, the said Inventors, for and in consideration of good and valuable consideration, the receipt of which from Alliance is hereby acknowledged, at the request of Alliance do hereby sell, assign, transfer, and set over unto the Alliance, its lawful successors, legal representatives and assigns, my entire right, title, and interest in and to this invention, provisional application (if any), and this application, and all national stage applications, divisions, continuations and continuations-in-part thereof, and all Letters Patent of the United States that may be granted thereon, and all reissues or reexaminations thereof, and all rights to claim priority on the basis of any provisional application describing the invention, as well as all rights to claim priority on the basis of this application, and all applications for Letters Patent, Invention Registrations and Utility Models that may hereafter be filed for this invention in any foreign country and all Letters Patent, Invention Registrations and Utility Models that may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof; and I hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to Alliance, its successors, legal representatives and assigns, in accordance with the terms of this Assignment;

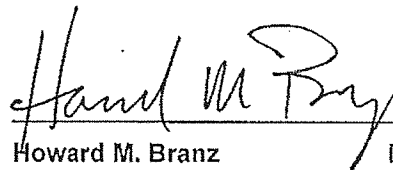
AND, WE HEREBY covenant that we have the full right to convey the interest assigned by this Assignment, that we are under no obligation to make any assignment of the Invention to any other party, and that we have not executed and will not execute any agreement in conflict with this Assignment;

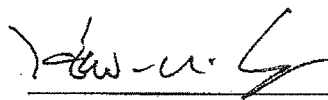
AND, WE HEREBY further covenant and agree that we will, without further consideration, communicate with Alliance, its successors, legal representatives and assigns, any facts known to us respecting this Invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this Invention in Alliance, its successors, legal representatives and assigns, execute all divisional, continuation, continuation-in-part and reissue applications, make all rightful oaths and generally do everything possible to aid Alliance, its successors, legal representatives and assigns, to obtain, sustain and enforce proper patent protection for this Invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by Alliance, its successors, legal representatives and assigns;

AND, WE HEREBY authorize Alliance, its successors, legal representatives and assigns, to fill in the information above concerning the application number and filing date of the patent application filed for this Invention after the execution of this Assignment if necessary.

IN TESTIMONY WHEREOF, we have hereunto set our hands below.

3/7/11
Jihun Oh Date

3/7/11
Howard M. Branz Date

3/7/2011
Hao-Chih Yuan Date