504990517 07/05/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5037264

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
WILLIAM MICHAEL NEMETH	06/21/2018
PAULS STRADINS	06/19/2018
VINCENZO ANTHONY LASALVIA	06/19/2018
MATTHEW ROBERT PAGE	06/29/2018
DAVID LEVI YOUNG	07/03/2018

RECEIVING PARTY DATA

Name:	ALLIANCE FOR SUSTAINABLE ENERGY, LLC
Street Address:	15013 DENVER WEST PARKWAY
Internal Address:	MAIL STOP 5231
City:	GOLDEN
State/Country:	COLORADO
Postal Code:	80401

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	16014695	

CORRESPONDENCE DATA

Fax Number: (303)384-7499

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 3033847571

Email: ipdocketing@nrel.gov

Correspondent Name: ALLIANCE FOR SUSTAINABLE ENERGY, LLC

Address Line 1: 15013 DENVER WEST PARKWAY

Address Line 2: MAIL STOP 5231

Address Line 4: GOLDEN, COLORADO 80401

ATTORNEY DOCKET NUMBER:	NREL 17-08
NAME OF SUBMITTER:	REINA R. BERNFELD
SIGNATURE:	/Reina R. Bernfeld/
DATE SIGNED:	07/05/2018
	This document serves as an Oath/Declaration (37 CFR 1.63).

PATENT REEL: 046271 FRAME: 0524

504990517

Total Attachments: 5 source=00095082#page1.tif source=00094999#page1.tif source=00094997#page1.tif source=00095506#page1.tif source=00095713#page1.tif

PATENT REEL: 046271 FRAME: 0526

1, day (0.100)	, , , , , , , , , , , , , , , , , , ,
e the full and unencumbered right to sell and assign the interests herein sold and assigned will not execute any document or instrument in conflict herewith.	
e Director of the $\rm U.S.$ Patent and Trademark Office to issue any and all Letters Patent of $\rm ^{1}EE$, its successors, or assigns in accordance herewith.	
right, title and interest in and to the above-identified invention in any form or a States and all foreign countries, including applications for patents in the United States and all foreign countries, including applications Patent Convention, so claiming priority thereto such as divisions or continuations thereof, and in and to any ted States and all countries of the world that may issue on any such applications or for all reissues or extensions thereof, to be held and enjoyed by said ASSIGNEE, its and of the term or terms for which any and all such patents may be granted as fully and and enjoyed by me had this Assignment not been made.	embodiment thereof, in the Unite and all countries of the world and including any and all applications and all patents granted in the United invention, including any and successors, or assigns to the full of
enver West Parkway, Golden, CO 80401	Address of Assignee: 15013 D
or Sustainable Energy, LLC	Name of Assignee: Alliance
tion, the receipt and sufficiency of which are hereby acknowledged, as a below-named i, and by these presents hereby sell and assign, unto:	
VESIGNMENT	
above by the attorney docket no. and title of invention	This assignment and declaration and the application identified and PCT International Application United States Application
OBMING INLERDIGILVLED BYCK CONTACT LAYERS	MELHODS OF F
	Title of Invention:
(For Use with Signed Application Data Sheet)	
T AND DECLARATION UNDER 37 C.F.R. § 1.63	VZZICNWEN
Worldwide Rights	NBET 11-08

representatives, or assigns in obtaining, reissuing, or enforcing patents for said invention. reissues or extensions, in said ASSIGNEE, its successors, or assigns, or to assist said ASSIGNEE, its successors, legal including divisions and continuations thereof and to any and all patents that may be granted therefor or thereon, including by said ASSIGNEE, its successors, legal representatives, or assigns to perfect title to said invention, to said application make all rightful oaths, testify in any legal proceedings, and perform all other lawful acts deemed necessary or desirable all information known to me relating to said invention or patent application and that I will execute and deliver any papers, I further coverant and agree that I will communicate to said ASSIGNEE, its successors, legal representatives, or assigns

DECLARATION

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

or imprisonment of not more than five (5) years, or both. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine

DATE	William Michael Nemeth	Inventor:
81-10-9	Carried Control of the Control of th	Signature:

ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63

(For Use with Signed Application Data Sheet)

Title of Invention:

This assignment and declaration are directed to (check one):

Pauls Stradins

Inventor:

METHODS OF FORMING INTERDIGITATED BACK CONTACT LAYERS

the application identified above by the attorney docket no. a PCT International Application Number, file	
United States Application No, filed	
ASSIGNME	NT
For good and valuable consideration, the receipt and sufficiency of inventor I have sold and assigned, and by these presents hereby sell	which are hereby acknowledged, as a below-named
Name of Assignee: Alliance for Sustainable Energy, LLC	
Address of Assignee: 15013 Denver West Parkway, Golden, C	O 80401
(hereinafter ASSIGNEE) all my right, title and interest in and to the embodiment thereof, in the United States and all foreign countries, and all countries of the world and through the Patent Cooperation I including any and all applications claiming priority thereto such as and all patents granted in the United States and all countries of the said invention, including any and all reissues or extensions thereof, successors, or assigns to the full end of the term or terms for which entirely as would have been held and enjoyed by me had this Assig	including applications for patents in the United States reaty and/or the European Patent Convention, divisions or continuations thereof, and in and to any world that may issue on any such applications or for to be held and enjoyed by said ASSIGNEE, its any and all such patents may be granted as fully and
I hereby authorize and request the Director of the U.S. Patent and I the United States to said ASSIGNEE, its successors, or assigns in a	· · · · · · · · · · · · · · · · · · ·
I warrant and covenant that I have the full and unencumbered right and that I have not executed and will not execute any document or	
I further covenant and agree that I will communicate to said ASSIC all information known to me relating to said invention or patent approached all rightful oaths, testify in any legal proceedings, and perform by said ASSIGNEE, its successors, legal representatives, or assigns including divisions and continuations thereof and to any and all paterissues or extensions, in said ASSIGNEE, its successors, or assign representatives, or assigns in obtaining, reissuing, or enforcing patering and to said assigns in obtaining.	plication and that I will execute and deliver any papers, in all other lawful acts deemed necessary or desirable is to perfect title to said invention, to said application tents that may be granted therefor or thereon, including its, or to assist said ASSIGNEE, its successors, legal
<u>DECLARATION</u>	
As a below named inventor, I hereby declare that:	
The above-identified application was made or authorized to be made	le by me.
I believe that I am the original inventor or an original joint inventor	r of a claimed invention in the application.
I hereby acknowledge that any willful false statement made in this or imprisonment of not more than five (5) years, or both.	declaration is punishable under 18 U.S.C. 1001 by fine
Signature: Inventor: Pauls Stradins	6/13/2018

Signature: [

Inventor:

Vincenzo Anthony ŁaSalvia

ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63

(For Use with Signed Application Data Sheet)

Title of Invention:

METHODS OF FORMING INTERDIGITATED BACK CONTACT LAYERS

the application i	claration are directed to (check one): dentified above by the attorney docket no. and title of invention al Application Number, filed
United States A	pplication No, filed
	ASSIGNMENT
For good and valuable inventor I have sold and	consideration, the receipt and sufficiency of which are hereby acknowledged, as a below-named assigned, and by these presents hereby sell and assign, unto:
Name of Assignee:	Alliance for Sustainable Energy, LLC
Address of Assignee:	15013 Denver West Parkway, Golden, CO 80401
embodiment thereof, in and all countries of the including any and all ap and all patents granted in said invention, includin successors, or assigns to	E) all my right, title and interest in and to the above-identified invention in any form or the United States and all foreign countries, including applications for patents in the United States world and through the Patent Cooperation Treaty and/or the European Patent Convention, oplications claiming priority thereto such as divisions or continuations thereof, and in and to any in the United States and all countries of the world that may issue on any such applications or for g any and all reissues or extensions thereof, to be held and enjoyed by said ASSIGNEE, its of the full end of the term or terms for which any and all such patents may be granted as fully and been held and enjoyed by me had this Assignment not been made.
	request the Director of the U.S. Patent and Trademark Office to issue any and all Letters Patent of ASSIGNEE, its successors, or assigns in accordance herewith.
	that I have the full and unencumbered right to sell and assign the interests herein sold and assigned uted and will not execute any document or instrument in conflict herewith.
all information known t make all rightful oaths, by said ASSIGNEE, its including divisions and reissues or extensions, i	gree that I will communicate to said ASSIGNEE, its successors, legal representatives, or assigns o me relating to said invention or patent application and that I will execute and deliver any papers, testify in any legal proceedings, and perform all other lawful acts deemed necessary or desirable successors, legal representatives, or assigns to perfect title to said invention, to said application continuations thereof and to any and all patents that may be granted therefor or thereon, including n said ASSIGNEE, its successors, or assigns, or to assist said ASSIGNEE, its successors, legal ns in obtaining, reissuing, or enforcing patents for said invention.
DECLARATION	
As a below named inver	ntor, I hereby declare that:
The above-identified ap	plication was made or authorized to be made by me.
I believe that I am the o	riginal inventor or an original joint inventor of a claimed invention in the application.
	nat any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine more than five (5) years, or both.

ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63

(For Use with Signed Application Data Sheet)

Title of Invention:

METHODS OF FORMING INTERDIGITATED BACK CONTACT LAYERS

The application	eclaration are directed to (check one): identified above by the attorney docket no. and title of	invention
PCT Internation United States A	nal Application Number, filed pplication No. 16/014,695, filed June 21, 2018	
	ASSIGNMENT	
For good and valuable inventor I have sold an	consideration, the receipt and sufficiency of which are d assigned, and by these presents hereby sell and assigned.	hereby acknowledged, as a below-named gn, unto:
Name of Assignee:	Alliance for Sustainable Energy, LLC	
Address of Assignee:	15013 Denver West Parkway, Golden, CO 80401	
embodiment thereof, in and all countries of the including any and all a and all patents granted said invention, includi successors, or assigns	E) all my right, title and interest in and to the above-ic the United States and all foreign countries, including world and through the Patent Cooperation Treaty and applications claiming priority thereto such as divisions in the United States and all countries of the world thang any and all reissues or extensions thereof, to be held to the full end of the term or terms for which any and a been held and enjoyed by me had this Assignment no	dapplications for patents in the United States for the European Patent Convention, or continuations thereof, and in and to any t may issue on any such applications or for d and enjoyed by said ASSIGNEE, its all such patents may be granted as fully and
Thereby authorize and the United States to sa	request the Director of the U.S. Patent and Trademark id ASSIGNEE, its successors, or assigns in accordance	Office to issue any and all Letters Patent of e herewith.
I warrant and covenan and that I have not exc	t that I have the full and unencumbered right to sell an ecuted and will not execute any document or instrumer	d assign the interests herein sold and assigned at in conflict herewith.
all information known make all rightful oaths by said ASSIGNEE, it including divisions an reissues or extensions.	agree that I will communicate to said ASSIGNEE, its to me relating to said invention or patent application as testify in any legal proceedings, and perform all others successors, legal representatives, or assigns to perfect continuations thereof and to any and all patents that it in said ASSIGNEE, its successors, or assigns, or to assigns in obtaining, reissuing, or enforcing patents for sa	and that I will execute and deliver any papers, in lawful acts deemed necessary or desirable at title to said invention, to said application may be granted therefor or thereon, including saist said ASSIGNEE, its successors, legal
DECLARATIO!	<u>7</u>	
As a below named inv	entor, I hereby declare that:	
The above-identified	application was made or authorized to be made by me.	
I believe that I am the	original inventor or an original joint inventor of a clai	med invention in the application.
I hereby acknowledge or imprisonment of no	that any willful false statement made in this declaration to more than five (5) years, or both.	on is punishable under 18 U.S.C. 1001 by fine
CO		6-29-2018
Signature: Matth	ew Robert Page	<u>6-29-20/8</u> date

REEL: 046271 FRAME: 0530

ASSIGNMENT AND DECLARATION UNDER 37 C.F.R. § 1.63

(For Use with Signed Application Data Sheet)

Title of Invention:

RECORDED: 07/05/2018

METHODS OF FORMING INTERDIGITATED BACK CONTACT LAYERS

the application PCT Internation	eclaration are directed to (check one) identified above by the attorney dock nal Application Numberpplication No. 16/014,695, filed June	tet no. and title of invention, filed	
	ASSIG	NMENT	
	consideration, the receipt and sufficient dassigned, and by these presents her	•	nowledged, as a below-named
Name of Assignee:	Alliance for Sustainable Energy,	LLC	
Address of Assignee:	15013 Denver West Parkway, Go	lden, CO 80401	
embodiment thereof, in and all countries of the including any and all a and all patents granted said invention, includir successors, or assigns t	E) all my right, title and interest in an the United States and all foreign couworld and through the Patent Cooper pplications claiming priority thereto s in the United States and all countries ag any and all reissues or extensions to the full end of the term or terms for been held and enjoyed by me had this	untries, including applications ration Treaty and/or the Euro such as divisions or continuate of the world that may issue thereof, to be held and enjoyer which any and all such pate	s for patents in the United States pean Patent Convention, tions thereof, and in and to any on any such applications or for ed by said ASSIGNEE, its ents may be granted as fully and
	request the Director of the U.S. Pater d ASSIGNEE, its successors, or assig		sue any and all Letters Patent of
	that I have the full and unencumbere cuted and will not execute any docum		
all information known make all rightful oaths, by said ASSIGNEE, its neluding divisions and reissues or extensions,	agree that I will communicate to said to me relating to said invention or part testify in any legal proceedings, and successors, legal representatives, or continuations thereof and to any and in said ASSIGNEE, its successors, or gns in obtaining, reissuing, or enforcing	tent application and that I will perform all other lawful acts assigns to perfect title to said I all patents that may be grant assigns, or to assist said AS	Il execute and deliver any papers, sideemed necessary or desirable dinvention, to said application ted therefor or thereon, including SIGNEE, its successors, legal
DECLARATION			
As a below named inve	entor, I hereby declare that:		
The above-identified ap	pplication was made or authorized to	be made by me.	
believe that I am the o	original inventor or an original joint in	aventor of a claimed inventic	on in the application.
	hat any willful false statement made more than five (5) years, or both.	in this declaration is punisha	ble under 18 U.S.C. 1001 by fine
Signature:	KUN Youg		7-3-2018
nventor: David	Levi Young		DATE PATENT