PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Panagiotis BAKAS	08/15/2011
Georgios DEMETRIADES	08/15/2011
Frans DIJKHUIZEN	08/15/2011
Staffan NORRGA	08/15/2011
Konstantinos PAPASTERGIOU	08/22/2011
Bengt STRIDH	06/16/2011
Stefan THORBURN	07/21/2011
Lennart ANGQUIST	06/27/2011

RECEIVING PARTY DATA

Name:	ABB RESEARCH LTD
Street Address:	Affolternstrasse 44
City:	Zurich
State/Country:	SWITZERLAND
Postal Code:	CH-8050

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13163173

CORRESPONDENCE DATA

Fax Number: (703)836-7419

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: 7038366620

Email: danielle.carro@bipc.com

Correspondent Name: BUCHANAN INGERSOLL & ROONEY

Address Line 1: P.O. BOX 1404

Address Line 4: ALEXANDRIA, VIRGINIA 22313-1404

ATTORNEY DOCKET NUMBER: 1034193-000235

501644395 PATENT REEL: 026838 FRAME: 0375

OP \$40,00 1316317

NAME OF SUBMITTER:	Patrick C. Keane
Total Attachments: 8 source=ASSIGNMENT#page1.tif	
source=ASSIGNMENT#page2.tif source=ASSIGNMENT#page3.tif source=ASSIGNMENT#page4.tif	
source=ASSIGNMENT#page5.tif source=ASSIGNMENT#page6.tif	
source=ASSIGNMENT#page7.tif source=ASSIGNMENT#page8.tif	

PATENT REEL: 026838 FRAME: 0376

ASSIGNMENT

(JOINT)

THIS ASSIGNMENT, by (1) Panagiotis BAKAS. (2) Georgios DEMETRIADES. (3) Frans DIJKHUIZEN, (4) Staffan NORRGA, (5) Konstantinos PAPASTERGIOU, (6) Bengt STRIDH, (7) Stefan THORBURN, and (8) Lennart ÄNGQUIST, residing at (1) Västerås, Sweden; (2) Västerås, Sweden; (3) Skultun, Sweden; (4) Stockholm, Sweden; (5) Västerås, Sweden; (6) Västerås, Sweden; (7) Västerås, Sweden; and (8) Enköping, Sweden; (hereinafter referred to as "the Assignors"), respectively, witnesseth:

WHEREAS, the Assignors have invented certain new and useful improvements in \underline{A} PHOTOVOLTAIC SYSTEM set forth in an application for Letters Patent of the United States, which is a

(1)		provisional application			
	(a)		bearing Application No.	, and filed on	
	(p)		to be filed herewith; or		
(2)	\boxtimes	non-p	provisional application		
	(a)		bearing Application No.	_, and filed on	i
	(b)		having an oath or declaration execufiling of application;	ted on even date herewith	prior to
	(c)		having an oath or declaration execut Assignment; and	ted on a different date tha	n this

WHEREAS, <u>ABB RESEARCH LTD</u>, a corporation duly organized under and pursuant to the laws of <u>Switzerland</u> and having a principal place of business at <u>Affolternstrasse 44</u>, <u>CH-8050 Zürich</u>, <u>Switzerland</u> (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and Interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

Application No. <u>Unassigned</u>
Attorney Docket No. <u>1034193-000235</u>
Page 2 of 2

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, 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;

AND the Assignors hereby authorize and request the attorneys of Buchanan Ingersoll & Rooney PC to insert in the spaces provided above the title of the invention, filing date, application number, and attorney's docket number of said application when known.

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said invention, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

DATE 9012 - 09 - 25	MV
	PANAGIOTIS BAKAS
DATE_2011 - 08 - 16	(diagulas)
	GEORGIOS DEMETRIADES
DATE XCH AT YS	FRANS DIJKHUIZEN
	FRANS DIJKHUIZEN
DATE26(/ + の名って	STAFFAN NORRGA
	"\$TJAFFAN NORRGA
DATE_ Tall on At	
	KONSTANTINOS PAPASTERGIOU
DATE	
	BENGT STRIDH
DATE	·
	STEFAN THORBURN
DATE	
	LENNART ÄNGQUIST

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Frofessionals

ASSIGNMENT

THIS ASSIGNMENT, by (1) Panagiotis BAKAS, (2) Georgios DEMETRIADES, (3) Frans DIJKHUIZEN, (4) Staffan NORRGA, (5) Konstantinos PAPASTERGIOU, (6) Bengt STRIDH, (7) Stefan THORBURN, and (8) Lennart ÄNGQUIST, residing at (1) Västerås, Sweden; (2) Västerås, Sweden; (3) Skultun, Sweden; (4) Stockholm, Sweden; (5) Västerås, Sweden; (6) Västerås, Sweden; (7) Västerås, Sweden; and (8) Enköping, Sweden; (hereinafter referred to as "the Assignors"), respectively, witnesseth:

120

WHEREAS, the Assignors have invented certain new and useful improvements in \underline{A} PHOTOVOLTAIC SYSTEM set forth in an application for Letters Patent of the United States, which is a

(1)		provisional application			
	(a)		bearing Application No,	and filed on;	
	(b)		to be filed herewith; or		
(2)		non-provisional application			
	(a)		bearing Application No,	and filed on;	
	(b)		having an oath or declaration execute filing of application;	d on even date herewith prior t	0
	(c)		having an oath or declaration execute Assignment; and	d on a different date than this	

WHEREAS, <u>ABB RESEARCH LTD</u>, a corporation duly organized under and pursuant to the laws of <u>Switzerland</u> and having a principal place of business at <u>Affolternstrasse 44, CH-8050 Zürich, Switzerland</u> (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made:

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

Application No. <u>Unassigned</u>
Attorney Docket No. <u>1034193-000235</u>
Page 2 of 2

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, 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;

AND the Assignors hereby authorize and request the attorneys of Buchanan Ingersoll & Rooney PC to insert in the spaces provided above the title of the invention, filing date, application number, and attorney's docket number of said application when known.

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said invention, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

DATE	
	PANAGIOTIS BAKAS
DATE	
	GEORGIOS DEMETRIADES
DATE	
	FRANS DIJKHUIZEN
DATE	
	STAFFAN NORRGA
DATE	
	KONSTANTINOS PAPASTERGIOU
DATE 2011-06-16	BENGT STRIDH
***************************************	BENGT STRIDH
DATE	
	STEFAN THORBURN
DATE	
DATE	LENNART ÄNGQUIST

Attorney Docket No. 1034193-000235

ASSIGNMENT

and the second s

(JOINT)

THIS ASSIGNMENT, by (1) Panagiotis BAKAS, (2) Georgios DEMETRIADES, (3) Frans.
THIS ASSIGNMENT, by (1) Patientille DAING (2) PAPASTERGIOU (6) Bengt STRIDH, DIJKHUIZEN, (4) Staffan NORRGA (5) Konstantinos PAPASTERGIOU (6) Bengt STRIDH, (7) Stefan THORBURN, and (8) Lennart ANGOUIST, residing at (1) Västerås, Sweden (7) Stefan THORBURN, and (8) Lennart ANGOUIST, residing at (1) Västerås, Sweden (7) Västerås, Sweden (8) Västerås, Sweden (9) Västerås, Sweden (1) Väst
(6) Vasterás Sweden (7) Vasteras Sweden and of Linkwood Systems (7)
"the Assigners"), respectively, witnesseth

WHEREAS, the Assignors have invented certain new and useful improvements in A PHOTOVOLTAIC SYSTEM set forth in an application for Letters Patent of the United States, which is a

(1) To provisional application		provisiona	
	(1 m)	O bea	ing Application No and filed oni
	(b)	CI to b	e filed herewith: or
(2)	[3]		ional application
	(a)		ring Application No, and filed on
	(6)		ng an oath or declaration executed on even date herewith prior to a of application;
	(c)		ng an oath or declaration executed on a different date than this grament; and

WHEREAS, ABB RESEARCH LTD, a corporation duly organized under and pursuant to the laws of Switzerland and having a principal place of business at Affoliarinstrasse 44, CH-8050 Zurich, Switzerland (hereinafter referred to as 'the Assignee'), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, fittle and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents. United States or foreign, to be obtained therefor and thereon

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be field and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or torms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made.

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth,

Bucharan Ingersoll & Rooney Pe

Application No. <u>Unassigned</u>
Attorney Docket No. 1034193-000235
Page 2 of 2

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable sign all papers and documents, take all lawful cattis, and do all acts thereon, is lawful and desirable sign all papers and documents, take all lawful cattis, and do all acts thereon, are patents for said inventions, 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, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns.

AND the Assignors hereby authorize and request the attorneys of Buchanan Ingersoll & Rooney PC to insert in the spaces provided above the title of the invention filing date application number, and attorney's docket number of said application when known.

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said invention, the Letters Patent to be issued for the sole use and benoof of the Assignee, its successors, legal representatives, and assigns.

	PANAGIOTIS BAKAS
DATE	GEORGIOS DEMETRIADES
DATE	FRANS DIJKHUIZEN
DATE	STAFFAN NORRGA
DATE	KONSTANTINOS PAPASTERGIOU
DATE	BENGT STRIPH
DATE 2011-07-24	STEFAN THORSURN
DAYE	LENNART ANGQUIST

Buchanan Ingersoll & Rooney PC

PATENT REEL: 026838 FRAME: 0382

ASSIGNMENT

(JOINT)

THIS ASSIGNMENT, by (1) Panagiotis BAKAS, (2) Georgios DEMETRIADES, (3) Frans DIJKHUIZEN, (4) Staffan NORRGA, (5) Konstantinos PAPASTERGIOU, (6) Bengt STRIDH, (7) Stefan THORBURN, and (8) Lennart ÄNGQUIST, residing at (1) Västerås, Sweden; (2) Västerås, Sweden; (3) Skultun, Sweden; (4) Stockholm, Sweden; (5) Västerås, Sweden; (6) Västerås, Sweden; (7) Västerås, Sweden; and (8) Enköping, Sweden; (hereinafter referred to as "the Assignors"), respectively, witnesseth:

WHEREAS, the Assignors have invented certain new and useful improvements in A PHOTOVOLTAIC SYSTEM set forth in an application for Letters Patent of the United States, which is a

(1)		provisional application		
	(a)		bearing Application No, and filed on;	
	(b)		to be filed herewith; or	
(2)	\boxtimes	non-provisional application		
	(a)		bearing Application No, and filed on;	
	(b)		having an oath or declaration executed on even date herewith prior to filing of application;	
	(c)		having an oath or declaration executed on a different date than this Assignment; and	

WHEREAS, <u>ABB RESEARCH LTD</u>, a corporation duly organized under and pursuant to the laws of <u>Switzerland</u> and having a principal place of business at <u>Affolternstrasse 44, CH-8050 Zürich, Switzerland</u> (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents. United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth:

Buchanan Ingersoll & Rooney PC
Attorneys & Government Relations Professionals

Application No. Unassigned Attorney Docket No. 1034193-000235 Page 2 of 2

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, 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;

AND the Assignors hereby authorize and request the attorneys of Buchanan Ingersoll & Rooney PC to insert in the spaces provided above the title of the invention, filing date, application number, and attorney's docket number of said application when known.

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said invention, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

DATE	
	PANAGIOTIS BAKAS
DATE	GEORGIOS DEMETRIADES
DATE	
	FRANS DIJKHUIZEN
DATE	STAFFAN NORRGA
DATE	
	KONSTANTINOS PAPASTERGIOU
DATE	BENGT STRIDH
	BENOT STRIBIT
DATE	
	STEFAN THORBURN
	Secural Anganist
DATE 2011-06-27	Jewas Angamil
	LENNART ÄNGQUIST

Buchanan Ingersoll & Rooney PC

PATENT REEL: 026838 FRAME: 0384

RECORDED: 08/31/2011