PATENT ASSIGNMENT

Electronic Version v1.1
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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Ferro Corporation	02/06/2013

RECEIVING PARTY DATA

Name:	HERAEUS PRECIOUS METALS NORTH AMERICA CONSHOHOCKEN LLC
Street Address:	24 Union Hill Road
City:	West Conshohocken
State/Country:	PENNSYLVANIA
Postal Code:	19428

PROPERTY NUMBERS Total: 31

Property Type	Number
Patent Number:	6814795
Application Number:	12573209
Patent Number:	8093491
Application Number:	13313133
Patent Number:	8236598
Application Number:	13542710
Patent Number:	8076570
Application Number:	11774632
Application Number:	13279720
Patent Number:	8309844
Application Number:	13615271
Application Number:	12097823
Application Number:	12682040
Application Number:	12675623
Application Number:	13340840

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Application Number:	13342231
Application Number:	13342334
Application Number:	61635255
Application Number:	61635262
Application Number:	61695579
PCT Number:	US2013021625
PCT Number:	US2012053748
PCT Number:	US2012051020
PCT Number:	US2012071119
PCT Number:	US2013021109
PCT Number:	US2012069117
PCT Number:	US2012069368
PCT Number:	US2013021669
PCT Number:	US2011050145
PCT Number:	US2011053590
PCT Number:	US2011057963

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	136617-00101
NAME OF SUBMITTER:	Charles R. Wolfe, Jr.
Signature:	/Charles R. Wolfe, Jr./
Date:	06/06/2013

Total Attachments: 14
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PATENT ASSIGNMENT

This PATENT ASSIGNMENT (this "Assignment"), effective the 6th day of February, 2013 (the "Effective Date"), is made and entered into by and between Ferro Corporation, a Ohio corporation ("Assignor") and Heraeus Precious Metals North America Conshohocken LLC, a Delaware limited liability company ("Assignee") (each a "Party," and collectively, the "Parties"). Capitalized terms used herein but not otherwise defined herein shall have the meanings set forth in the Purchase Agreement (defined below).

WHEREAS, Assignor, Assignee and certain other parties named therein have entered into that certain Purchase Agreement, dated as of February 6, 2013 (as amended from time to time, the "Purchase Agreement"), pursuant to which, among other things, Assignor agreed to sell, assign, transfer and deliver to Assignee certain Sold Assets (as defined in the Purchase Agreement), as more fully described in the Purchase Agreement, on the terms and subject to the conditions set forth in the Purchase Agreement;

WHEREAS, the Sold Assets include, without limitation, the patents and patent applications set forth on Schedule A hereto and the inventions described in the Invention Disclosures set forth in Schedule B hereto (collectively, the "Transferred Patents"); and

WHEREAS, Assignor and Assignee now desire to enter into this Assignment to evidence the sale, assignment, transfer and delivery to Assignee of the Transferred Patents;

NOW THEREFORE, for good and valuable consideration, including the consideration set forth in the Purchase Agreement, the receipt and sufficiency of which is hereby acknowledged, Assignor and Assignee hereby agree as follows:

1) Assignment. Assignor hereby sells, assigns, transfers and delivers to Assignee, and Assignee hereby purchases and acquires from Assignor, all rights, title, and interests of Assignor:

(a) in and to the inventions as described in the Transferred Patents, for the United States and its possessions and territories and for all foreign countries(including, without limitation, all rights therein provided by international conventions and treaties),

(b) in and to Transferred Patents and any and all United States and foreign patent applications disclosing said inventions, including provisional applications, nonprovisional applications, continuations, divisions, continuations-in-part, continued prosecution applications, utility model applications, and any other related United States and foreign patent applications thereof, along with all rights of priority created by said patent applications under the Paris Convention, and any other treaty relating thereto,

(c) in and to all United States and foreign patents and utility models which may be granted on any and all of the Transferred Patents including reissues, reexaminations, extensions or foreign equivalents thereof, and all other corresponding rights that are or may be secured under the laws of the United States or any foreign country, now or hereafter in effect,

(d) in and to all causes of action and rights to sue for and damages resulting from past, present and future infringement or other unauthorized use of all United States and foreign patents granted or to be granted on the Transferred Patents and inventions disclosed therein, and related patents and/or patent applications including extensions, reissues, and reexamination certificates thereto; and

(e) in and to all income, royalties, damages or payments accrued, due or payable as of the Effective Date or thereafter, including, without limitation, all claims for damages by reason of past, present or future infringement or other unauthorized use of the Transferred Patents, with the right to sue for, and collect the same,

in each case, for Assignee's own use and enjoyment, and for the use and enjoyment of its successors, assigns or other legal representatives, as fully and entirely as the same would have been held and enjoyed by Assignor if this Assignment and sale had not been made.

2) No Warranties. Except as expressly provided in the Purchase Agreement, Assignor makes no warranties, express or implied, with respect to the Transferred Patents.

3) Recordal. Assignor hereby authorizes and requests the Commissioner of Patents of the United States, and any other official of any applicable Governmental Authority, to record this Assignment and to issue any and all registrations from any and all applications for registration included in the Transferred Patents to and in the name of Assignee.

4) Further Assurances. Assignor shall, upon request of Assignee, and without further remuneration, timely execute, or cause its affiliates or current or former employees of Assignor or any affiliate of Assignor to execute, and deliver any additional documents and perform such additional acts necessary or desirable to record and perfect the interest of Assignee in and to the Transferred Patents. Upon request of Assignee, and without further remuneration, Assignor shall execute, or shall cause its affiliates or current or former employees of Assignor or any affiliate of Assignor to execute, any and all papers desired by Assignee for the filing, prosecution, and granting of patent applications related to the inventions disclosed in the Transferred Patents and the perfecting of title thereto in Assignee. Relative to employees referenced in this section who may not be employed by Assignor at the time of a request by Assignee, Assignor will make a commercially reasonable effort to secure the signature of such employees.

5) Interpretation. This Assignment is intended to implement the provisions of the Purchase Agreement, is expressly subject to the terms and conditions thereof, and shall not be construed to enhance, extend or limit the representations and warranties, rights, obligations or remedies of any party thereunder. In case of any conflict between the terms and conditions of this Assignment and the terms and conditions of the Purchase Agreement, the terms and conditions of the Purchase Agreement shall govern.

6) Governing Law. This Assignment shall be governed by, and construed in accordance with, the laws of the State of New York, regardless of the laws that might govern under principles of conflict of laws thereof.

7) Counterparts. This Assignment may be executed in one or more counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same agreement.

[Remainder of page intentionally blank. Signature page follows.]

IN WITNESS WHEREOF, the Assignor and Assignee have caused this Assignment to be executed by its duly authorized representatives.

FERRO CORPORATION

By: _____
Name: Peter T. Thomas
Title: Interim President and Chief Executive Officer

HERAEUS PRECIOUS METALS NORTH AMERICA CONSHOHOCKEN LLC

By: _____
Name: Uwe Kupka
Title: President and CEO

Schedule A

PATENTS AND PATENT APPLICATIONS

Docket No.	Descriptive Title	Country	Patent No. or (App No.)	Filing Date	Issue Date	Estimated Expiration Date
0289	Hot Melt Conductor Paste Composition	US	6,814,795	11/27/2001	11/9/2004	11/27/2021
0289PCT.001	Hot Melt Conductor Paste Composition	EP	(02776403.4)	11/1/2002		
0289PCT.002	Hot Melt Conductor Paste Composition	CA	2,467,690	5/19/2004	11/18/2008	5/19/2024
0289PCT.003	Hot Melt Conductor Paste Composition	CN	ZL028233956	5/25/2004	5/28/2008	11/1/2022
0289PCT.004	Hot Melt Conductor Paste Composition	JP	4355573	5/13/2004	8/7/2009	11/1/2022
0289PCT.005	Hot Melt Conductor Paste Composition	AU	2002-342251	4/20/2004	9/27/2007	11/1/2022
0289PCT.006	Hot Melt Conductor Paste Composition	KR	10-0920763	5/25/2004	9/30/2009	11/1/2022
15394.001	Method Of Making Solar Cell Contacts	TW	(94139362)	11/10/2005		
15394.002.001	Method Of Making Solar Cell Contacts	KR	10-1127085	5/9/2007	3/8/2012	10/14/2025
15394.002.002	Method Of Making Solar Cell Contacts	CN	(200580038536.1)	5/10/2007		
15394.002.002.01	Method Of Making Solar Cell Contacts	CN	(2012103356682)	9/12/2012		
15394.002.003	Method Of Making Solar Cell Contacts	AU	2005-307036	4/3/2007	1/25/2012	10/14/2025
15394.002.004	Method Of Making Solar Cell Contacts	JP	(2007-541189)	5/11/2007		
15394.002.005	Method Of Making Solar Cell Contacts	CA	2,584,073	4/13/2007	8/14/2012	10/14/2025
15394.002.006	Method Of Making Solar Cell Contacts	EP	(05815033.5)	4/25/2007		
15394.003	Method Of Making Solar Cell Contacts	US	(12/573,209)	10/5/2009		

Docket No.	Descriptive Title	Country	Patent No. or (App No.)	Filing Date	Issue Date	Estimated Expiration Date
16112	Lead Free Solar Cell Contacts	US	8,093,491	6/3/2005	1/10/2012	6/3/2025
16112.001.001	Lead Free Solar Cell Contacts	IN	(8558/DELNP/2007)	11/6/2007		
16112.001.002	Lead Free Solar Cell Contacts	JP	(2008-514675)	12/3/2007		
16112.001.003	Lead Free Solar Cell Contacts	KR	10-2007-7028175	12/3/2007	9/12/2012	5/16/2026
16112.001.004	Lead Free Solar Cell Contacts	AU	2006255758	11/8/2007	10/20/2011	5/16/2026
16112.001.005	Lead Free Solar Cell Contacts	CN	ZL2006800193703	11/30/2007	12/16/2009	5/16/2026
16112.001.006	Lead Free Solar Cell Contacts	CA	(2,609,646)	11/22/2007		
16112.001.007	Lead Free Solar Cell Contacts	EP	1 886 343	11/9/2007	7/14/2010	5/16/2026
16112.02	Lead Free Solar Cell Contacts	US	(13/313,133)	12/7/2011		
16357.001.001	Layered Contact Structure For Solar Cells	US	8,236,598	12/4/2008	8/7/2012	8/31/2027
16357.001.001.01	Layered Contact Structure For Solar Cells	US	(13/542,710)	7/6/2012		
16357.001.02	Layered Contact Structure For Solar Cells	JP	(2010-523147)	3/11/2010		
16357.001.03	Layered Contact Structure For Solar Cells	KR	(10-2010-7004254)	2/25/2010		
16357.001.04	Layered Contact Structure For Solar Cells	CN	(2008801049446)	3/1/2010		
16357.001.04.0	Layered Contact Structure For Solar	CN	(2012100271466)	2/8/2012		

Docket No.	Descriptive Title	Country	Patent No. or (App No.)	Filing Date	Issue Date	Estimated Expiration Date
1	Cells					
16357.001.05	Layered Contact Structure For Solar Cells	EP	(08828746.1)	3/29/2010		
16441	Aluminum-Boron Solar Cell Contacts	US	8,076,570	3/20/2006	12/13/2011	3/20/2026
16441.001.001	Aluminum-Boron Solar Cell Contacts	CN	2006800539186	9/19/2008	7/6/2011	9/19/2028
16441.001.001.01	Aluminum-Boron Solar Cell Contacts	CN	(2011101475875)	5/27/2011		
16441.001.002	Aluminum-Boron Solar Cell Contacts	JP	(2009-501413)	9/22/2008		
16441.001.003	Aluminum-Boron Solar Cell Contacts	AU	2006340758	9/4/2008	1/19/2012	12/3/2026
16441.001.004	Aluminum-Boron Solar Cell Contacts	CA	(2,643,655)	9/9/2008		
16441.001.005	Aluminum-Boron Solar Cell Contacts	KR	(10-2008-7024428)	10/6/2008		
16441.001.006	Aluminum-Boron Solar Cell Contacts	EP	(06846462.7)	9/8/2008		
16441.002	Aluminum-Boron Solar Cell Contacts	TW	(96109115)	3/16/2007		
16441.003	Solar Cell Contacts Containing Aluminum And At Least One Of Boron, Titanium, Nickel, Tin, Silver, Gallium, Zinc Indium And Copper	US	(11/774,632)	7/9/2007		
16441.003.001.01	Solar Cell Contacts Containing Aluminum And At Least One Of Boron, Titanium, Nickel, Tin, Silver, Gallium,	JP	(2010-516191)	1/12/2010		

Docket No.	Descriptive Title	Country	Patent No. or (App No.)	Filing Date	Issue Date	Estimated Expiration Date
	Zinc Indium And Copper					
16441.003.001.02	Solar Cell Contacts Containing Aluminum And At Least One Of Boron, Titanium, Nickel, Tin, Silver, Gallium, Zinc Indium And Copper	EP	(08772447.2)	12/23/2009		
16441.003.001.03	Solar Cell Contacts Containing Aluminum And At Least One Of Boron, Titanium, Nickel, Tin, Silver, Gallium, Zinc Indium And Copper	CN	(2008800239392)	1/8/2010		
16441.003.001.03.01	Solar Cell Contacts Containing Aluminum And At Least One Of Boron, Titanium, Nickel, Tin, Silver, Gallium, Zinc Indium And Copper	CN	(201202109531)	6/26/2012		
16441.003.001.04	Solar Cell Contacts Containing Aluminum And At Least One Of Boron, Titanium, Nickel, Tin, Silver, Gallium, Zinc Indium And Copper	KR	(10-2010-7000291)	1/7/2010		
16441.003.002	Solar Cell Contacts Containing Aluminum And At Least One Of Boron, Titanium, Nickel, Tin, Silver, Gallium,	TW	(097124503)	6/30/2008		

Docket No.	Descriptive Title	Country	Patent No. or (App No.)	Filing Date	Issue Date	Estimated Expiration Date
	Zinc Indium And Copper					
16441.04	Aluminum-Boron Solar Cell Contacts	US	(13/279,720)	10/24/2011		
17304	Thick Film Pastes For Fire Through Application In Solar Cells	US	8,309,844	8/29/2007	11/13/2012	4/25/2029
17304.001	Thick Film Pastes For Fire Through Application In Solar Cells	TW	(097128988)	7/31/2008		
17304.002.01	Thick Film Pastes For Fire Through Application In Solar Cells	EP	(08796804.6)	2/9/2010		
17304.002.02	Thick Film Pastes For Fire Through Application In Solar Cells	CN	(2008801044033)	2/25/2010		
17304.002.03	Thick Film Pastes For Fire Through Application In Solar Cells	KR	(10-2010-7003846)	2/22/2010		
17304.002.04	Thick Film Pastes For Fire Through Application In Solar Cells	JP	(2010-523009)	3/1/2010		
17304.002.05	Thick Film Pastes For Fire Through Application In Solar Cells	CA	(2,695,568)	2/3/2010		
17304.03	Thick Film Pastes For Fire Through Application In Solar Cells	US	(13/615,271)	9/13/2012		
17305.001.001	Thick Film Conductor Formulations Comprising Ag and Ni or Ni-Alloys And	US	(12/097,823)	6/17/2008		

Docket No.	Descriptive Title	Country	Patent No. or (App No.)	Filing Date	Issue Date	Estimated Expiration Date
	Solar Cells Made Therefrom					
17305.001.02	Thick Film Conductor Formulations Comprising Ag and Ni or Ni-Alloys And Solar Cells Made Therefrom	EP	(08746767.6)	10/15/2009		
17305.001.03	Thick Film Conductor Formulations Comprising Ag and Ni or Ni-Alloys And Solar Cells Made Therefrom	KR	(10-2009-7022082)	10/22/2009		
17305.001.04	Thick Film Conductor Formulations Comprising Ag and Ni or Ni-Alloys And Solar Cells Made Therefrom	JP	(2010-506492)	10/26/2009		
17305.001.05	Thick Film Conductor Formulations Comprising Ag and Ni or Ni-Alloys And Solar Cells Made Therefrom	CN	(2008800130351)	10/22/2009		
17473.001	Dielectric Coating For Single Sided Back Contact Solar Cells	US	(12/682,040)	9/30/2010		
17473.002.01	Dielectric Coating For Single Sided Back Contact Solar Cells	EP	(08839318.6)	3/31/2010		
17473.002.02	Dielectric Coating For Single Sided Back Contact Solar Cells	CN	(2008801120022)	4/16/2010		
17473.002.03	Dielectric Coating For Single Sided	JP	(2010-530091)	4/19/2010		

Docket No.	Descriptive Title	Country	Patent No. or (App No.)	Filing Date	Issue Date	Estimated Expiration Date
	Back Contact Solar Cells					
17473.002.04	Dielectric Coating For Single Sided Back Contact Solar Cells	KR	(10-2010-7008270)	4/15/2010		
18437.01	Via Fill Material For Solar Applications	PCT	PCT/US2011/050145	9/1/2011		
18596.01.01	Electrically Conductive Polymeric Compositions, Contacts, Assemblies, and Methods	EP	(09822696.2)	4/7/2011		
18596.01.02	Electrically Conductive Polymeric Compositions, Contacts, Assemblies, and Methods	CN	(2009801420411)	4/21/2011		
18596.01.03	Electrically Conductive Polymeric Compositions, Contacts, Assemblies, and Methods	JP	(2011-533327)	4/22/2011		
18596.01.04	Electrically Conductive Polymeric Compositions, Contacts, Assemblies, and Methods	KR	(10-2011-7011511)	5/20/2011		
18596.02	Electrically Conductive Polymeric Compositions, Contacts, Assemblies, and Methods	US	(12/675,623)	1/24/2011		
33491.01	Single Component, Low Temperature	PCT	PCT/US2011/053590	9/28/2011		

Docket No.	Descriptive Title	Country	Patent No. or (App No.)	Filing Date	Issue Date	Estimated Expiration Date
	Curable Polymeric Composition and Related Method					
33675.01	Oxides And Glasses For Use With Aluminum Back Solar Cell Contacts	US	(13/340,840)	12/30/2011		
33676.01	Organometallic And Hydrocarbon Additives For Use With Aluminum Back Solar Cell Contacts	US	(13/342,231)	1/3/2012		
33708.01	SOLAR CELL METALLIZATIONS CONTAINING METAL ADDITIVE	PCT	PCT/US2011/057963	10/27/2011		
33708.01.01	SOLAR CELL METALLIZATIONS CONTAINING METAL ADDITIVE	US	In preparation			
33905.01	Vanadium, Cobalt And Strontium Additives For Use In Aluminum Back Solar Cell Contacts	US	(13/342,334)	1/3/2012		
34517.01	Solar Cell Metallizations Containing Organozinc Compound	PCT	PCT/US2013/021625	1/16/2013		
34519.01	Silver Solar Cell Contacts	PCT	PCT/US2012/053748	9/5/2012		
34817.01	Fire Through Aluminum Paste For SiNx And Better BSF Formation	PCT	PCT/US2012/051020	8/16/2012		
34818.01	Solar Cell Pastes For Low Resistance	PCT	PCT/US2012/071119	12/21/2012		

Docket No.	Descriptive Title	Country	Patent No. or (App No.)	Filing Date	Issue Date	Estimated Expiration Date
	Contacts					
34872.01	Aluminum Paste For Back Passivated Cells With Locally Opened Vias	PCT	PCT/US2013/021109	1/11/2013		
35259	Solar Cell Contacts With Nickel Intermetallic Compositions	US	(61/635,255)	4/18/2012		
35260	Methods Of Printing Solar Cell Contacts	US	(61/635,262)	4/18/2012		
35397.01	Electrically Conductive Polymeric Composition, Contacts, Assemblies, and Methods	PCT	PCT/US2012/069117	12/12/2012		
35400.01	Conductive Polymeric Composition With Metal and Metal-Coated Particles And Their Use As Back Contacts For Solar Cells	PCT	PCT/US2012/069368	12/13/2012		
35454.01	Aluminum Conductor Paste For Back Passivated Non-Firethrough Reflector Paste Applications	PCT	PCT/US2013/021669	1/16/2013		
36106	Conductive Pastes For Low Temperature Metallization Schemes	US	(61/695,579)	8/31/2012		

Schedule B

INVENTION DISCLOSURES

None.