505359077 03/05/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5405865

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
NORITAKE CO., LIMITED	03/05/2019

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: 2

Property Type	Number
Patent Number:	8778232
Patent Number:	8889039

CORRESPONDENCE DATA

Fax Number: (202)420-2201

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.

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Email: jyeddo@blankrome.com
Correspondent Name: BLANK ROME LLP
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ATTORNEY DOCKET NUMBER:	136617.00100
NAME OF SUBMITTER:	JUDY YEDDO
SIGNATURE:	/Judy Yeddo/
DATE SIGNED:	03/05/2019

Total Attachments: 2

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PATENT 505359077 REEL: 048509 FRAME: 0635

Transfer of Ownership

made and entered into

by and between

Heraeus Precious Metals North America Conshohocken LLC 24 Union Hill Road PA 19428 Conshohocken USA

-hereinafter referred to as "Heraeus" —

and

Noritake Co., Limited 3-1-36 Noritake-Shinmachi, Nishi-ku, Nagoya, 451-8501 Japan

- hereinafter referred to as "Noritake" -

- both hereinafter jointly referred to as the "Parties" or individually as "Party".

Noritake confirms that Noritake is the unrestricted owner of the following patents/patent

applications:

No.	Country	Application number	Patent number	
	Name of invention			
	Japan	2009-177493	5649290	
1-1	LEAD-FREE EL	ECTRICALLY COND	UCTIVE COMPOSITION	
	FOR SOLAR CELL ELECTRODES			
1-2	Taiwan	99121030	1544496	
	LEAD-FREE EL	ECTRICALLY COND	UCTIVE COMPOSITION	
	FOR SOLAR CELL ELECTRODES			
1-3	United States of	13/387,520	8778232	
	America			
	LEAD-FREE CO	NDUCTIVE COMPOU	ND FOR SOLAR CELL	
	ELECTRODES			

PATENT REEL: 048509 FRAME: 0636

2-1	Japan	2009-217945	5137923	
	PASTE COMPOS	PASTE COMPOSITION FOR SOLAR BATTERY ELECTRODE		
2-2	Taiwan	99130646	1471282	
	PASTE COMPOS	ITION FOR SOLAR BA	ATTERY ELECTRODE	
2-3	China	201080041275.X	ZL201080041275.X;	
		:	CN102498524.B	
	PASTE COMPOS	ITION FOR SOLAR BA	ATTERY ELECTRODE	
2-4	United States of	13/395,814	8889039	
	America			
	PASTE COMPOS	ITION FOR SOLAR BA	ATTERY ELECTRODE	
3-1	Japan	2013-536024	5856178	
	LEAD-FREE CO	ONDUCTIVE PASTE	COMPOSITION FOR	
	SOLAR CELLS			
	Taiwan	101129358	1543955	
3:-2	LEAD-FREE EL	ECTRICALLY CONDI	UCTIVE COMPOSITION	
	FOR SOLAR CELL ELECTRODES			
3-3	China	201280047886.4	ZL201280047886.4	
	LEAD-FREE EL	ECTRICALLY CONDU	JCTIVE COMPOSITION	
	FOR SOLAR CEL	LELECTRODES		
3-4	Germany	112012004085.6	,	
	LEAD-FREE EL	ECTRICALLY CONDU	UCTIVE COMPOSITION	
	FOR SOLAR CEL	L ELECTRODES		

- hereinafter referred to as "Patents" —.

Noritake hereby assigns and transfers to Heraeus 100% of the ownership in the Patents and Heraeus accepts such assignment and transfer of ownership.

Weiming thang

RECORDED: 03/05/2019

Akira Nagater

PATENT REEL: 048509 FRAME: 0637