

## TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

ETAS ID: TM472438

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT		
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST		
<b>CONVEYING PARTY DATA</b>			
<b>Name</b>	<b>Formerly</b>	<b>Execution Date</b>	<b>Entity Type</b>
PACIFIC INDUSTRIAL DEVELOPMENT CORP.		04/26/2018	Corporation: MICHIGAN
<b>RECEIVING PARTY DATA</b>			
<b>Name:</b>	WELLS FARGO BANK		
<b>Street Address:</b>	777 EISENHOWER PARKWAY		
<b>Internal Address:</b>	SUITE 925		
<b>City:</b>	ANN ARBOR		
<b>State/Country:</b>	MICHIGAN		
<b>Postal Code:</b>	48108		
<b>Entity Type:</b>	National Association: UNITED STATES		
<b>PROPERTY NUMBERS Total: 3</b>			
<b>Property Type</b>	<b>Number</b>	<b>Word Mark</b>	
<b>Registration Number:</b>	4528334	PIDC	
<b>Registration Number:</b>	4528335	PIDC	
<b>Registration Number:</b>	3418886	ALUMAX	
<b>CORRESPONDENCE DATA</b>			
<b>Fax Number:</b>	8446706009		
<i>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.</i>			
<b>Phone:</b>	313-223-3151		
<b>Email:</b>	nzemgulis@dickinsonwright.com		
<b>Correspondent Name:</b>	ERIC S. BERGERON		
<b>Address Line 1:</b>	350S. MAIN ST.		
<b>Address Line 2:</b>	SUITE 300		
<b>Address Line 4:</b>	ANN ARBOR, MICHIGAN 48104		
<b>ATTORNEY DOCKET NUMBER:</b>	16019-63		
<b>NAME OF SUBMITTER:</b>	ERIC S. BERGERON		
<b>SIGNATURE:</b>	/ERIC S. BERGERON/		
<b>DATE SIGNED:</b>	05/03/2018		
<b>Total Attachments: 10</b>			

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## PATENT AND TRADEMARK SECURITY AGREEMENT

April 26 2018

This PATENT AND TRADEMARK SECURITY AGREEMENT (this "Agreement") is entered into as of the date first set forth above by PACIFIC INDUSTRIAL DEVELOPMENT CORP., a Michigan corporation (the "Debtor"), in favor WELLS FARGO BANK, NATIONAL ASSOCIATION ("Bank"), pursuant to the Credit Agreement referred to below.

### RECITALS

A. Debtor and the Bank entered into a Credit Agreement dated as of February 2, 2018 (as amended, supplemented, restated or otherwise modified from time to time, including any agreement entered into in replacement thereof, the "Credit Agreement"), pursuant to the Bank has agreed, subject to certain terms and conditions, to extend credit and make certain other financial accommodations available to Debtor.

B. In connection with the Credit Agreement, Debtor and the Bank entered into a Security Agreement dated as of February 2, 2018 (as amended, supplemented, restated or otherwise modified from time to time, including any agreement entered into in replacement thereof, the "Security Agreement"), pursuant to which Debtor has granted to the Bank a security interest in Debtor's assets to secure the payment and performance of: (a) all present and future Indebtedness of Debtor to Bank; (b) all obligations of Debtor and rights of Bank under the Security Agreement; and (c) all present and future obligations of Debtor to Bank of other kinds. The word "Indebtedness" is used herein in its most comprehensive sense and includes any and all advances, debts, obligations and liabilities of Debtor, or any of them, heretofore, now or hereafter made, incurred or created, whether voluntary or involuntary and however arising, whether due or not due, absolute or contingent, liquidated or unliquidated, determined or undetermined, including under any swap, derivative, foreign exchange, hedge, deposit, treasury management or other similar transaction or arrangement, and whether Debtor may be liable individually or jointly with others, or whether recovery upon such Indebtedness may be or hereafter becomes unenforceable

C. Pursuant to the terms of the Security Agreement, Debtor pledged, assigned and granted to the Bank a security interest in all personal property of Debtor, including, without limitation, all patents and patent applications and all trademarks and trademark applications of Debtor.

### AGREEMENT

In consideration of the recitals set forth above and the mutual agreements contained herein, in the Credit Agreement, and in the Security Agreement, Debtor hereby grants to the Bank to secure the payment and performance of: (a) all present and future Indebtedness of Debtor to Bank; (b) the obligations of Debtor and rights of Bank under the Security Agreement and this Agreement; and (c) all present and future obligations of Debtor to Bank of other kinds, a continuing security interest in all of Debtor's right, title and interest in, to and under the

following, whether now owned by or owing to, or hereafter acquired by or arising in favor of Debtor (including as identified by any trade name or any derivations thereof):

- (1) each unregistered patent, patent registration and patent application, including, without limitation, each patent and patent application referred to in Schedule 1 attached hereto, together with any renewal thereof;
- (2) each patent license to which Debtor is a party, including, without limitation, each patent license listed on Schedule 1 attached hereto;
- (3) all products and proceeds of the foregoing, including, without limitation, any and all claims by Debtor against third parties for past, present or future infringement of any patent, including, without limitation, any patent referred to in Schedule 1 attached hereto, any patent issued pursuant to a patent application referred to in Schedule 1 attached hereto and any patent licensed under any patent license listed on Schedule 1 attached hereto (items 1 through 3 being herein collectively referred to as the "Patent Collateral");
- (4) each unregistered trademark, trademark registration and trademark application, including, without limitation, each trademark and trademark application referred to in Schedule 2 attached hereto, together with any renewal thereof;
- (5) each trademark license to which Debtor is a party, including, without limitation, each trademark license listed on Schedule 2 attached hereto;
- (6) all products and proceeds of the foregoing, including, without limitation, any and all claims by Debtor against third parties for past, present or future infringement of any trademark, including, without limitation, any trademark referred to in Schedule 2 attached hereto, any trademark issued pursuant to a trademark application referred to in Schedule 2 attached hereto and any trademark licensed under any trademark license listed on Schedule 2 attached hereto (items 4 through 6 being herein collectively referred to as the "Trademark Collateral");


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The security interest granted to the Bank herein is granted in furtherance, and not in limitation of, the security interests granted to the Bank pursuant to the Security Agreement and nothing in this Agreement shall limit the security interests granted in the Security Agreement. Debtor acknowledges and affirms that the rights and remedies of the Bank with respect to the security interest in the Patent Collateral and the Trademark Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated herein by reference as if fully set forth herein. In the event of any conflict between the terms of this Agreement and the Security Agreement, the terms of the Security Agreement shall govern. All capitalized terms used but not defined herein shall have the respective meanings ascribed thereto in the Security Agreement.

*[Signature pages follow]*

IN WITNESS WHEREOF, Debtor has executed this Agreement as of the date first set forth above.

**PACIFIC INDUSTRIAL DEVELOPMENT  
CORP.**

By:   
Name: Wei Wu  
Title: President and Secretary

**SCHEDULE 1**  
**to**  
**PATENT AND TRADEMARK SECURITY AGREEMENT**

See attached.

Docket Number	Title	Country Name	Case Type	Filing Type	Status	Application Number	Application Date	Publication Number	Publication Date	Patent Number	Issue Date
13595-3	RARE EARTH ALUMINA PARTICULATE MANUFACTURING METHOD AND APPLICATION	Patent Cooperation Treaty	Regular	Patent Cooperation Treaty	Inactive Completed	PCT/US2007/019052	8/29/2007	WO 2009/029070	3/5/2009	X	X
13595-4	RARE EARTH ALUMINA PARTICULATE MANUFACTURING METHOD AND APPLICATION	United States	Regular	PCT Nationalization	Issued	12/675,664	8/29/2007	2010-0285956A1	11/11/2010	8,629,077	1/14/2014
13595-5	RARE EARTH ALUMINA PARTICULATE MANUFACTURING METHOD AND APPLICATION	China P.R.	Regular	PCT Nationalization	Issued	200780100835.2	8/29/2007	CN101827651A	9/8/2010	200780100835.2	6/10/2015
13595-6	RARE EARTH ALUMINA PARTICULATE MANUFACTURING METHOD AND APPLICATION	European Community	Regular	PCT Nationalization	Filed Pending	07811609.2	8/29/2007	EP2190574A1	6/2/2010		

13595-7	SULFUR-RESISTANT CATALYST SUPPORT MATERIAL	United States	Provisional Filing	National	Inactive Completed	61/389,924	10/5/2010	X	X	X	X
13595-11	SULFUR-RESISTANT CATALYST SUPPORT MATERIAL	Patent Cooperation Treaty	Regular	Patent Cooperation Treaty	Inactive Completed	PCT/US2011/054735	10/4/2011	WO 2012/047864	4/12/2012	X	X
13595-16	SULFUR-RESISTANT CATALYST SUPPORT MATERIAL	United States	Regular	PCT Nationalization	Filed Pending	13/877,230	10/4/2011	2013-0252807A1	9/26/2013		
13595-17	SULFUR-RESISTANT CATALYST SUPPORT MATERIAL	China P.R.	Regular	PCT Nationalization	Issued	201180054854.2	10/4/2011	CN103228354A	7/31/2013	201180054854.2	8/12/2015
13595-18	SULFUR-RESISTANT CATALYST SUPPORT MATERIAL	European Community	Regular	PCT Nationalization	Filed Pending	11771345.3	10/4/2011	EP2624952A1	8-14-2013		
13595-19	SULFUR-RESISTANT CATALYST SUPPORT MATERIAL	Japan	Regular	PCT Nationalization	Issued	2013-532879	10/4/2011	JP2013541414	11/14/2013	5845268	11/27/2015

Docket Number	Title	Country Name	Case Type	Filing Type	Status	Application Number	Application Date	Publication Number	Publication Date	Patent Number	Issue Date
13595-8	TYPE OF CATALYST SUPPORT MATERIALS WITH OXYGEN STORAGE CAPACITY (OSC) AND MAKING METHODS THEREOF	United States	Provisional Filing	National	Inactive Completed	61/425,958	12/22/2010	X	X	X	X
13595-9	TYPE OF CATALYST SUPPORT MATERIALS WITH OXYGEN STORAGE CAPACITY (OSC) AND MAKING METHODS THEREOF	China P.R.	Regular	National	Issued	201110204362.9	7/21/2011	CN102553653A	7/11/2012	CN102553653B	9/14/2016
13595-12	CATALYST SUPPORT MATERIALS WITH OXYGEN STORAGE CAPACITY (OSC) AND METHOD OF MAKING THEREOF	Patent Cooperation Treaty	Regular	Patent Cooperation Treaty	Inactive Completed	PCT/US2011/066715	12/22/2011	WO2012/088373	2/14/2013	X	X
13595-21	CATALYST SUPPORT MATERIALS WITH OXYGEN STORAGE CAPACITY (OSC) AND METHOD OF MAKING THEREOF	United States	Regular	PCT Nationalization	Issued	13/996,073	12/22/2011	2013-0274096A1	10/17/2013	9,387,461	7/12/2016
13595-22	CATALYST SUPPORT MATERIALS WITH OXYGEN STORAGE CAPACITY (OSC) AND METHOD OF MAKING THEREOF	European Patent Convention	Regular	PCT Nationalization	Filed Pending	11813496.4	12/22/2011	EP2654949A2	10/20/2013		
13595-23	CATALYST SUPPORT MATERIALS WITH OXYGEN STORAGE CAPACITY (OSC) AND METHOD OF MAKING THEREOF	Japan	Regular	PCT Nationalization	Issued	2013-546403	12/22/2011	JP2014510616	05/01/2014	5987002	8/12/2016
13595-29	DOPED CATALYST SUPPORT MATERIALS HAVING OXYGEN STORAGE CAPACITY (OSC) AND METHOD OF MAKING THEREOF	United States	Regular	US Continuation in Part of matter-21	Filed Pending	15/184,247	6/16/2016	2016-0296910A1	10/13/2016		
13595-50	CATALYST SUPPORT MATERIALS WITH OXYGEN STORAGE CAPACITY (OSC) AND METHOD OF MAKING THEREOF	United States	Regular	US Continuation of matter -21	Issued	15/179,122	6/10/2016	2016-0346764A1	12/1/2016	9597666	3/21/2017
13595-51	DOPED CATALYST SUPPORT MATERIALS HAVING OXYGEN STORAGE CAPACITY (OSC) AND METHOD OF MAKING THEREOF	China P.R.	Regular	National for matter-29	Filed Pending	201610621391.8	8/1/2016				
13595-52	DOPED CATALYST SUPPORT MATERIALS HAVING OXYGEN STORAGE CAPACITY (OSC) AND METHOD OF MAKING THEREOF	European Patent Convention	Regular	National for matter-29	Filed Pending	16177594.5	7/1/2016				
13595-53	DOPED CATALYST SUPPORT MATERIALS HAVING OXYGEN STORAGE CAPACITY (OSC) AND METHOD OF MAKING THEREOF	Japan	Regular	National for matter-29	Filed Pending	2016-138738	7/13/2016				



Docket Number	Title	Country Name	Case Type	Filing Type	Status	Application Number	Application Date	Publication Number	Publication Date	Patent Number	Issue Date
13595-10	PROCESS FOR PRODUCING A COPPER-CHABAZITE ZEOLITE CATALYST	United States	Provisional Filing	National	Inactive Abandoned	61/535,599	9/16/2011	X	X	X	X
13595-13	ALUMINA SILICATE ZEOLITE-TYPE MATERIAL FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION AND PROCESS OF MAKING THEREOF	United States	Provisional Filing	National	Inactive Completed	61/707,385	9/28/2012	X	X	X	X
13595-20	AN ALUMINA SILICATE ZEOLITE-TYPE MATERIAL HAVING PROLONGED ACID STRENGTH FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION AND PROCESS OF MAKING THEREOF	United States	Provisional Filing	National	Inactive Completed	61/791,709	3/15/2013	X	X	X	X
13595-24	ALUMINA SILICATE ZEOLITE-TYPE MATERIAL FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION AND PROCESS OF MAKING THEREOF	Patent Cooperation Treaty	Regular	Patent Cooperation Treaty	Inactive Completed	PCT/US2013/062083	9/27/2013	WO 2015/266007	9/24/2015	X	X
13595-35	ALUMINA SILICATE ZEOLITE-TYPE MATERIAL HAVING PROLONGED ACID STRENGTH FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION AND PROCESS OF MAKING THEREOF	United States	Regular	National	Filed Pending	14/669,187	3/26/2015	2015-0266007A1	9/24/2015		
13595-36	ALUMINA SILICATE ZEOLITE-TYPE MATERIAL FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION AND PROCESS OF MAKING THEREOF	China P.R.	Regular	PCT Nationalization	Filed Pending	201380058685.9	9/27/2013	CN104797337A	7/22/2015		
13595-37	ALUMINA SILICATE ZEOLITE-TYPE MATERIAL FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION AND PROCESS OF MAKING THEREOF	European Patent Convention	Regular	PCT Nationalization	Allowed	13773570.0	9/27/2013	2900372	8/5/2015		
13595-38	ALUMINA SILICATE ZEOLITE-TYPE MATERIAL FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION AND PROCESS OF MAKING THEREOF	Japan	Regular	PCT Nationalization	Allowed	2015534688	9/27/2013	JP2015536889	9/24/2015		
13595-63	ALUMINA SILICATE ZEOLITE-TYPE MATERIAL FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION AND PROCESS OF MAKING THEREOF	Germany	Regular	EPC Validation	Allowed	13773570.0	9/27/2013	2900372	8/5/2015		

Docket Number	Title	Country Name	Case Type	Filing Type	Status	Application Number	Application Date	Publication Number	Publication Date	Patent Number	Issue Date
13595-14	METHOD OF PREPARING AN STI-TYPE ZEOLITE FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION REACTIONS	United States	Provisional Filing	National	Inactive Completed	61/707,392	9/28/2012	X	X	X	X
13595-25	METHOD OF PREPARING AN STI-TYPE ZEOLITE FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION REACTIONS	Patent Cooperation Treaty	Regular	Patent Cooperation Treaty	Inactive Completed	PCT/US2013/062075	9/27/2013	WO 2014/052691	4/3/2014	X	X
13595-39	METHOD OF PREPARING AN STI-TYPE ZEOLITE FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION REACTIONS	United States	Regular	National	Filed Pending	14/669,197	3/26/2015	2015-0196876A1	7/16/2015		
13595-40	METHOD OF PREPARING AN STI-TYPE ZEOLITE FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION REACTIONS	China P.R.	Regular	PCT Nationalization	Allowed	201380058689.7	9/27/2013	CN104918884A	9/16/2015		
13595-41	METHOD OF PREPARING AN STI-TYPE ZEOLITE FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION REACTIONS	European Patent Convention	Regular	PCT Nationalization	Filed Pending	13773569.2	9/27/2013	EP2900600	8/5/2015		
13595-42	METHOD OF PREPARING AN STI-TYPE ZEOLITE FOR USE AS A CATALYST IN SELECTIVE CATALYTIC REDUCTION REACTIONS	Japan	Regular	PCT Nationalization	Filed Pending	2015534686	9/27/2013	JP2015535800	12/17/2015		

13595-30	PROCESS FOR PRODUCING NANO-SCALE CRYSTALLINE BOEHMITE	United States	Provisional Filing	National	Inactive Completed	62/090,596	12/11/2014	X	X	X	X
13595-45	PROCESS FOR PRODUCING NANO-SCALE CRYSTALLINE BOEHMITE	Patent Cooperation Treaty	Regular	Patent Cooperation Treaty	Inactive Completed	PCT/US2015/065011	12/10/2015	WO 2016/094665	6/16/2016	X	X
13595-59	PROCESS FOR PRODUCING NANO-SCALE CRYSTALLINE BOEHMITE	United States	Regular	PCT Nationalization	Filed Pending	15/534,146	12/10/2015				
13595-60	PROCESS FOR PRODUCING NANO-SCALE CRYSTALLINE BOEHMITE	European Patent Convention	Regular	PCT Nationalization	Filed Pending	15825689.1	12/10/2015	3230209	10/18/2017		
13595-61	PROCESS FOR PRODUCING NANO-SCALE CRYSTALLINE BOEHMITE	China P.R.	Regular	PCT Nationalization	Filed Pending	201580073708.2	12/10/2015	CN107207770A	9/26/2017		
13595-62	PROCESS FOR PRODUCING NANO-SCALE CRYSTALLINE BOEHMITE	Japan	Regular	PCT Nationalization	Filed Pending	2017-531265	12/10/2015				

Docket Number	Title	Country Name	Case Type	Filing Type	Status	Application Number	Application Date	Publication Number	Publication Date	Patent Number	Issue Date
13595-33	HIGH PORE VOLUME ALUMINA PREPARED FROM BOEHMITE WITH AN OLIGOMER OR POLYMER OF AN ALKYLENE OXIDE	United States	Provisional Filing	National	Inactive Abandoned	62/084,650	11/26/2014	X	X	X	X
13595-46	METHOD FOR MAKING MESOPOROUS ZIRCONIUM-BASED MIXED OXIDE	United States	Provisional Filing	National	Inactive Completed	62/316,753	4/1/2016	X	X	X	X
13598-58	METHOD FOR MAKING MESOPOROUS ZIRCONIUM-BASED MIXED OXIDE	Patent Cooperation Treaty	Regular	Patent Cooperation Treaty	Filed Pending	PCT/US2017/024895	3/30/2017	WO2017/173018	10/5/2017		

**SCHEDULE 2**  
to  
**PATENT AND TRADEMARK SECURITY AGREEMENT**

<b>Trademark</b>	<b>Serial / Reg. No.</b>	<b>Reg. Date</b>	<b>Filing Date</b>
PIDC	4528334	May 13, 2014	June 26, 2013
PIDC logo	4528335	May 13, 2014	June 26, 2013
ALUMAX	3418886	April 29, 2008	November 28, 2005