504349755 05/03/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4396444

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------------|----------------|
| CHANDRANI GHOSH | 12/09/2015 |
| RYAN J. TROVITCH | 11/17/2015 |
| RAJA PAL | 12/02/2015 |
| TYLER M. PORTER | 01/03/2016 |
| TUFAN K. MUKHOPADHYAY | 12/09/2015 |
| HAGIT BEN-DAAT LEVIN | 11/24/2015 |

RECEIVING PARTY DATA

| Name: | ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY | |
|-------------------|--|--|
| Street Address: | 1475 NORTH SCOTTSDALE ROAD | |
| Internal Address: | SUITE 200 | |
| City: | SCOTTSDALE | |
| State/Country: | ARIZONA | |
| Postal Code: | 85257 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14896813 |

CORRESPONDENCE DATA

Fax Number: (414)271-3552

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: 414-277-5000

Email: kathy.mcgraw@quarles.com
Correspondent Name: QUARLES & BRADY LLP

Address Line 1: 411 E. WISCONSIN AVE., SUITE 2350

Address Line 2: C/O RICHARD T ROCHE

Address Line 4: MILWAUKEE, WISCONSIN 53202-4426

| ATTORNEY DOCKET NUMBER: | 112624.00643/M13-208P | |
|-------------------------|-----------------------|--|
| NAME OF SUBMITTER: | RICHARD T. ROCHE | |
| SIGNATURE: | /Richard T. Roche/ | |

PATENT 504349755 REEL: 042226 FRAME: 0379

| DATE SIGNED: | 05/03/2017 |
|----------------------------------|------------|
| Total Attachments: 6 | |
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| source=assignments-tbf#page2.tif | |
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| source=assignments-tbf#page4.tif | |
| source=assignments-tbf#page5.tif | |
| source=assignments-tbf#page6.tif | |

PATENT REEL: 042226 FRAME: 0380

For good and valuable consideration, the receipt of which is hereby acknowledged, we,

HAGIT BEN-DAAT LEVIN, (Assignor) of Scottsdale, Arizona,

have sold, assigned, and transferred, and do hereby sell, assign, and transfer unto ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY (Assignee), a non-profit organization of the State of Arizona, having its principal office in Scottsdale, State of Arizona, United States of America, and its successors, assigns, and legal representatives, the entire right, title, and interest in and to certain invention(s) entitled FIRST-ROW TRANSITION METAL HYDROGENATION AND HYDROSILYATION CATALYSTS, which is described, illustrated, and claimed in International Application No. PCT/US2014/041845 filed on June 11, 2014, which claims the benefit of U.S. Provisional Application No. 61/834,220, filed on June 12, 2013, and U.S. Provisional Application No. 61/916,448, filed on December 16, 2013, together with the entire right, title and interest in and to the US application, and in and to any application for patent filed in any country claiming priority to, claiming the invention described in, or otherwise based on the US application, and in and to any continuation, division, reissue, reexamination, extension, renewal, or substitute thereof, and in and to any patent which may grant from such application(s).

I hereby authorize and request all government authorities in any country to issue patent(s) upon the aforesaid application, continuation, division, reissue, reexamination, extension, renewal, or substitute, to Assignee, for the sole use and behalf of Assignee, its successors, assigns, and legal representatives, to the full end of the term for which the patent(s) may be granted, the same as they would have been held and enjoyed by us had this assignment not been made.

I agree that, when requested, I will, without charge to Assignee, but at its expense, sign all papers, take all rightful oaths, and do all acts which may be necessary, desirable, or convenient for securing and maintaining patents for the invention(s) in any and all countries and for vesting title thereto in Assignee, its successors, assigns, and legal representatives or nominees.

I covenant with Assignee, its successors, assigns, and legal representatives, that the interest and property hereby conveyed is free from all prior assignment, grant, mortgage, license, or other encumbrance.

Signature by HAGIT BEN-DAAT LEVIN

Nata

11/24/2015

For good and valuable consideration, the receipt of which is hereby acknowledged, we,

TUFAN K. MUKHOPADHYAY (Assignor) of Tempe, Anzona.

have sold, assigned, and transferred, and do hereby sell, assign, and transfer unto ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY (Assignee), a nonprofit organization of the State of Arizona, having its principal office in Scottsdale, State of Arizona, United States of America, and its successors, assigns, and legal representatives, the entire right, title, and interest in and to certain invention(s) entitled FIRST-ROW TRANSITION METAL HYDROGENATION AND HYDROSILYATION CATALYSTS, which is described, illustrated, and claimed in International Application No. PCT/US2014/041845 filed on June 11, 2014, which claims the benefit of U.S. Provisional Application No. 61/834,220, filed on June 12, 2013, and U.S. Provisional Application No. 61/916,448, filed on December 16, 2013, together with the entire right, title and interest in and to the US application, and in and to any application for patent filed in any country claiming priority to, claiming the invention described in, or otherwise based on the US application, and in and to any continuation, division, reissue, reexamination, extension, renewal, or substitute thereof, and in and to any patent which may grant from such application(s).

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Signature by: TUFAN K. MUKHOPADHYAY Date

Assignment-M14-060L/112624-00603

For good and valuable consideration, the receipt of which is hereby acknowledged, we,

TYLER M. PORTER, (Assignor) of Cave Creek, Arizona,

have sold, assigned, and transferred, and do hereby sell, assign, and transfer unto ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY (Assignee), a non-profit organization of the State of Arizona, having its principal office in Scottsdale, State of Arizona, United States of America, and its successors, assigns, and legal representatives, the entire right, title, and interest in and to certain invention(s) entitled FIRST-ROW TRANSITION METAL HYDROGENATION AND HYDROSILYATION CATALYSTS, which is described, illustrated, and claimed in International Application No. PCT/US2014/041845 filed on June 11, 2014, which claims the benefit of U.S. Provisional Application No. 61/834,220, filed on June 12, 2013, and U.S. Provisional Application No. 61/916,448, filed on December 16, 2013, together with the entire right, title and interest in and to the US application, and in and to any application for patent filed in any country claiming priority to, claiming the invention described in, or otherwise based on the US application, and in and to any continuation, division, reissue, reexamination, extension, renewal, or substitute thereof, and in and to any patent which may grant from such application(s).

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Tyler Porter
Signature by: TYLER M. PORTER

Data

01/03/16

For good and valuable consideration, the receipt of which is hereby acknowledged, we,

RAJA PAL (Assignor) of Tempe, Arizona,

have sold, assigned, and transferred, and do hereby sell, assign, and transfer unto ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY (Assignee), a non-profit organization of the State of Arizona, having its principal office in Scottsdale, State of Arizona, United States of America, and its successors, assigns, and legal representatives, the entire right, title, and interest in and to certain invention(s) entitled FIRST-ROW TRANSITION METAL HYDROGENATION AND HYDROSILYATION CATALYSTS, which is described, slustrated, and claimed in international Application No. PCT/US2014/041845 filed on June 11, 2014, which claims the benefit of U.S. Provisional Application No. 61/834,220, filed on June 12, 2013, and U.S. Provisional Application No. 61/916,448, filed on December 16, 2013, together with the entire right, title and interest in and to the US application, and in and to any application for patent filed in any country claiming priority to, claiming the invention described in, or otherwise based on the US application, and in and to any continuation, division, reissue, reexamination, extension, renewal, or substitute thereof, and in and to any patent which may grant from such application(s).

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I covenant with Assignee, its successors, assigns, and legal representatives, that the interest and property hereby conveyed is free from all prior assignment, grant, mortgage, license, or other encumbrance.

Signature by: RAJA PAL

12/02/15⁻

For good and valuable consideration, the receipt of which is hereby acknowledged, we,

RYAN J. TROVITCH, (Assignor) of Phoenix, Arizona,

have sold, assigned, and transferred, and do hereby sell, assign, and transfer unto ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY (Assignee), a non-profit organization of the State of Arizona, having its principal office in Scottsdale, State of Arizona, United States of America, and its successors, assigns, and legal representatives, the entire right, title, and interest in and to certain invention(s) entitled FIRST-ROW TRANSITION METAL HYDROGENATION AND HYDROSILYATION CATALYSTS, which is described, illustrated, and claimed in International Application No. PCT/US2014/041845 filed on June 11, 2014, which claims the benefit of U.S. Provisional Application No. 61/834,220, filed on June 12, 2013, and U.S. Provisional Application No. 61/916,448, filed on December 16, 2013, together with the entire right, title and interest in and to the US application, and in and to any application for patent filed in any country claiming priority to, claiming the invention described in, or otherwise based on the US application, and in and to any continuation, division, reissue, reexamination, extension, renewal, or substitute thereof, and in and to any patent which may grant from such application(s).

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I covenant with Assignee, its successors, assigns, and legal representatives, that the interest and property hereby conveyed is free from all prior assignment, grant, mortgage, license, or other encumbrance.

Signature by: RYAN J. TROVITCH

For good and valuable consideration, the receipt of which is hereby acknowledged, we,

CHANDRANI GHOSH, (Assignor) of Wolkata, West Bengal INDIA,

have sold, assigned, and transferred, and do hereby sell, assign, and transfer unto ARIZONA BOARD OF REGENTS ON BEHALF OF ARIZONA STATE UNIVERSITY (Assignee), a non-profit organization of the State of Arizona, having its principal office in Scottsdale, State of Arizona, United States of America, and its successors, assigns, and legal representatives, the entire right, title, and interest in and to certain invention(s) entitled FIRST-ROW TRANSITION METAL HYDROGENATION AND HYDROSILYATION CATALYSTS, which is described, illustrated, and claimed in International Application No. PCT/US2014/041846 filed on June 11, 2014, which claims the benefit of U.S. Provisional Application No. 61/834,220, filed on June 12, 2013, and U.S. Provisional Application No. 61/916,448, filed on December 16, 2013, together with the entire right, title and interest in and to the US application, and in and to any application for patent filed in any country claiming priority to, claiming the invention described in, or otherwise based on the US application, and in and to any patent which may grant from such application(s).

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| Orandrani Glodin | 12/09/15 |
|-------------------------------|----------|
| Signature by: CHANDRANI GHOSH | Date |

PATENT REEL: 042226 FRAME: 0386

RECORDED: 05/03/2017