

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT5788519

|                              |                |
|------------------------------|----------------|
| <b>SUBMISSION TYPE:</b>      | NEW ASSIGNMENT |
| <b>NATURE OF CONVEYANCE:</b> | ASSIGNMENT     |

**CONVEYING PARTY DATA**

| Name          | Execution Date |
|---------------|----------------|
| MAO YE        | 10/14/2019     |
| TAO ZHANG     | 10/14/2019     |
| JINLING ZHANG | 10/14/2019     |
| ZHONGMIN LIU  | 10/14/2019     |
| JINMING JIA   | 10/14/2019     |
| HAILONG TANG  | 10/14/2019     |
| CHANGQING HE  | 10/14/2019     |
| XIANGAO WANG  | 10/14/2019     |
| CHENG ZHANG   | 10/14/2019     |
| HUA LI        | 10/14/2019     |
| YINFENG ZHAO  | 10/14/2019     |
| CHENGGONG LI  | 10/14/2019     |

**RECEIVING PARTY DATA**

|                        |   |
|------------------------|---|
| <b>Name:</b>           | DALIAN INSTITUTE OF CHEMICAL PHYSICS, CHINESE ACADEMY OF SCIENCES |
| <b>Street Address:</b> | NO. 457 ZHONGSHAN ROAD  |
| <b>City:</b>           | DALIAN, LIAONING  |
| <b>State/Country:</b>  | CHINA   |
| <b>Postal Code:</b>    | 116023  |

**PROPERTY NUMBERS Total: 1**

| Property Type       | Number   |
|---------------------|----------|
| Application Number: | 16608444 |

**CORRESPONDENCE DATA**

Fax Number: (703)991-7071

*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.*

Email: patent@MAIERANDMAIER.COM

Correspondent Name: MAIER &amp; MAIER, PLLC

Address Line 1: 345 SOUTH PATRICK STREET

Address Line 4: ALEXANDRIA, VIRGINIA 22314

PATENT

|                                |  |
|--------------------------------|--|
| <b>ATTORNEY DOCKET NUMBER:</b> | 12040014US   |
| <b>NAME OF SUBMITTER:</b>      | CHRISTOPHER J. MAIER                                       |
| <b>SIGNATURE:</b>              | /Christopher J. Maier/                                     |
| <b>DATE SIGNED:</b>            | 10/25/2019   |
|                                | This document serves as an Oath/Declaration (37 CFR 1.63). |

**Total Attachments: 12**

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**DECLARATION AND ASSIGNMENT**

Title of Invention: FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER

**DECLARATION**

As a below named inventor, I hereby declare that:

This declaration is directed to:

- The attached application, or
- United States application or PCT international application number \_\_\_\_\_, filed on \_\_\_\_\_

The above-identified application was made or authorized to be made by me. I believe I am the original inventor or an original joint inventor of a claimed invention in the application. I have reviewed and understood the contents of the above-identified application, including the claims, and any claim amendments made in the application. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

**ASSIGNMENT**

WHEREAS, I, Mao YE, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

WHEREAS, DALIAN INSTITUTE OF CHEMICAL PHYSICS, CHINESE ACADEMY OF SCIENCES, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNEE, are desirous of acquiring the entire right, title and interest in and to the same in the United States;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I, ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the entire right, title, and interest in and to said INVENTION and application throughout the United States of America, including any and all Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application.

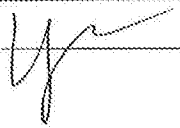
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Legal Name of Inventor: Mao YE

\_\_\_\_\_  
Inventor's Signature



06.16.2019  
Date

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**ASSIGNMENT**

WHEREAS, I, Tao ZHANG, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

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Legal Name of Inventor: Tao ZHANG

X Tao ZHANG X Oct. 14, 2019

Inventor's Signature Date

**DECLARATION AND ASSIGNMENT**

Title of Invention: FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER

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I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

**ASSIGNMENT**

WHEREAS, I, Jinling ZHANG, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

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Legal Name of Inventor: Jinling ZHANG

X Jinling ZHANG  
Inventor's Signature

X Oct. 14, 2019  
Date

**DECLARATION AND ASSIGNMENT**

Title of Invention: FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER

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I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

**ASSIGNMENT**

WHEREAS, I, Zhongmin LIU, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

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Legal Name of Inventor: Zhongmin LIU

Zhongmin LIU  Oct. 14, 2019  
 Inventor's Signature Date

**DECLARATION AND ASSIGNMENT**

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**ASSIGNMENT**

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Legal Name of Inventor: Jinming JIA

X Jinming JIA  
 Inventor's Signature

X Oct. 14, 2019  
 Date

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**ASSIGNMENT**

WHEREAS, I, Hailong TANG, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

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Legal Name of Inventor: Hailong TANG

X Hailong TANG X Oct. 14, 2019  
 Inventor's Signature Date



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ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) in the United States for said INVENTION, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE'S expense, to identify and communicate to ASSIGNEE at ASSIGNEE'S request documents and information concerning the INVENTION that are within ASSIGNOR'S possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR'S obligations under this instrument shall extend to ASSIGNOR'S heirs, executors, administrators and other legal representatives.

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ASSIGNOR authorizes any member of the firm of Maier & Maier, PLLC to insert or complete any information in this document needed to effect its recordal in the U.S. Patent and Trademark Office.

Legal Name of Inventor: Changqing HE

X Changqing HE  
Inventor's Signature

X Oct. 14, 2019  
Date

**DECLARATION AND ASSIGNMENT**

Title of Invention: FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER

**DECLARATION**

As a below named inventor, I hereby declare that:

This declaration is directed to:

- The attached application, or
- United States application or PCT international application number \_\_\_\_\_, filed on \_\_\_\_\_

The above-identified application was made or authorized to be made by me. I believe I am the original inventor or an original joint inventor of a claimed invention in the application. I have reviewed and understood the contents of the above-identified application, including the claims, and any claim amendments made in the application. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

**ASSIGNMENT**

WHEREAS, I, Xiangao WANG, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

WHEREAS, DALIAN INSTITUTE OF CHEMICAL PHYSICS, CHINESE ACADEMY OF SCIENCES, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNEE, are desirous of acquiring the entire right, title and interest in and to the same in the United States;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I, ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the entire right, title, and interest in and to said INVENTION and application throughout the United States of America, including any and all Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application.

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) in the United States for said INVENTION, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE'S expense, to identify and communicate to ASSIGNEE at ASSIGNEE'S request documents and information concerning the INVENTION that are within ASSIGNOR'S possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument. ASSIGNOR'S obligations under this instrument shall extend to ASSIGNOR'S heirs, executors, administrators and other legal representatives.

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ASSIGNOR authorizes any member of the firm of Maier & Maier, PLLC to insert or complete any information in this document needed to effect its recordal in the U.S. Patent and Trademark Office.

Legal Name of Inventor: Xiangao WANG

X Xiangao WANG X Oct. 14, 2019  
 Inventor's Signature Date

**DECLARATION AND ASSIGNMENT**

Title of Invention: FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER

**DECLARATION**

As a below named inventor, I hereby declare that:

This declaration is directed to:

- The attached application, or  
 United States application or PCT international application number \_\_\_\_\_, filed on \_\_\_\_\_

The above-identified application was made or authorized to be made by me. I believe I am the original inventor or an original joint inventor of a claimed invention in the application. I have reviewed and understood the contents of the above-identified application, including the claims, and any claim amendments made in the application. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

**ASSIGNMENT**

WHEREAS, I, Cheng ZHANG, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

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Legal Name of Inventor: Cheng ZHANG

Cheng ZHANG  
 Inventor's Signature

Oct. 14, 2019  
 Date

**DECLARATION AND ASSIGNMENT**

Title of Invention: FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER

**DECLARATION**

As a below named inventor, I hereby declare that:

This declaration is directed to:

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The above-identified application was made or authorized to be made by me. I believe I am the original inventor or an original joint inventor of a claimed invention in the application. I have reviewed and understood the contents of the above-identified application, including the claims, and any claim amendments made in the application. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

**ASSIGNMENT**

WHEREAS, I, Hua LI, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

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Legal Name of Inventor: Hua LI

x Hua LI  
Inventor's Signature

x Oct. 14, 2019  
Date

**DECLARATION AND ASSIGNMENT**

Title of Invention: FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER

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**ASSIGNMENT**

WHEREAS, I, Yinfeng ZHAO, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

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Legal Name of Inventor: Yinfeng ZHAO

X Yinfeng ZHAO  
Inventor's Signature

X Oct. 14, 2019  
Date

**DECLARATION AND ASSIGNMENT**

Title of Invention: FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER

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**ASSIGNMENT**

WHEREAS, I, Chenggong LI, whose post office address is No. 457 Zhongshan Road, Dalian, Liaoning 116023, China, hereinafter referred to as ASSIGNOR, am the owner of useful improvements in FLUIDIZED BED REACTOR AND METHOD FOR PRODUCING PARA-XYLENE CO-PRODUCED LOWCARBON OLEFIN FROM BENZENE AND METHANOL AND/OR DIMETHYL ETHER (hereinafter referred to as the INVENTION) for which the above application for United States Letters Patent was filed on: \_\_\_\_\_ Serial No.: \_\_\_\_\_; or established by PCT International Patent Application No.: \_\_\_\_\_ filed: \_\_\_\_\_ designating the United States of America;

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Legal Name of Inventor: Chenggong LI

X Chenggong LI  
Inventor's Signature

X Oct. 14, 2019  
Date

**PATENT**