

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT												
NATURE OF CONVEYANCE:	ASSIGNMENT												
CONVEYING PARTY DATA													
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Bun-Yeoul Lee</td> <td>04/03/2013</td> </tr> <tr> <td>Ji-Hae Park</td> <td>04/03/2013</td> </tr> <tr> <td>Seung-Hyun Do</td> <td>04/03/2013</td> </tr> </tbody> </table>		Name	Execution Date	Bun-Yeoul Lee	04/03/2013	Ji-Hae Park	04/03/2013	Seung-Hyun Do	04/03/2013				
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<table border="1"> <tr> <td>Name:</td> <td>Lotte Chemical Corporation</td> </tr> <tr> <td>Street Address:</td> <td>(Sindaebang-dong) 51 Boramae-ro 5-gil</td> </tr> <tr> <td>Internal Address:</td> <td>Dongjak-gu</td> </tr> <tr> <td>City:</td> <td>Seoul</td> </tr> <tr> <td>State/Country:</td> <td>KOREA, REPUBLIC OF</td> </tr> <tr> <td>Postal Code:</td> <td>156-711</td> </tr> </table>		Name:	Lotte Chemical Corporation	Street Address:	(Sindaebang-dong) 51 Boramae-ro 5-gil	Internal Address:	Dongjak-gu	City:	Seoul	State/Country:	KOREA, REPUBLIC OF	Postal Code:	156-711
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CORRESPONDENCE DATA													
Fax Number: 7044441111 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> Phone: 704-444-1000 Email: patent-mail@alston.com Correspondent Name: ALSTON & BIRD LLP Address Line 1: BANK OF AMERICA PLAZA Address Line 2: 101 SOUTH TRYON STREET, SUITE 4000 Address Line 4: CHARLOTTE, NORTH CAROLINA 28280-4000													
ATTORNEY DOCKET NUMBER:	038779/425149												
NAME OF SUBMITTER:	Guy R. Gosnell												
Signature:	/Guy R. Gosnell/												

PATENT

Date:

04/24/2013

Total Attachments: 4

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ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each undersigned inventor has sold and assigned, and by these presents hereby sells and assigns, unto

Lotte Chemical Corporation
(Sindaebang-dong) 51 Boramae-ro 5-gil, Dongjak-gu
Seoul 156-711, Republic of Korea

its successors and assigns, the entire right, title and interest, so far as concerns the United States and the Territories and Possessions thereof and all foreign countries in and to the invention in

"GROUP 4 METAL COMPOUND CONTAINING THIOPHENE-FUSED CYCLOPENTADIENYL LIGAND DERIVED FROM TETRAQUINOLINE DERIVATIVE AND OLEFIN POLYMERIZATION USING THE SAME"

as set forth in this United States Patent Application

- ☐ executed concurrently herewith
- ☐ executed on
- ☒ Application No. 13/640,924; filed October 12, 2012
- ☒ Application is a national phase entry of PCT International Application Number PCT/KR2011/002580, filed on April 12, 2011, which claims priority to Korean Patent Application No. 10-2010-0033273, filed on April 12, 2010, and Korean Patent Application No. 10-2010-0057102, filed on June 16, 2010 all applications listed above being hereinafter referred to as the "application(s)";

said application for United States Letters Patent, including all divisional, renewal, substitute, continuation, nonprovisionals, continuation-in-parts, and Convention applications based in whole or in part upon said inventions or upon said applications, and any and all Letters Patent and reissues, reexaminations, and extensions of Letters Patent granted for said inventions or upon said applications and every priority right that is or may be predicated upon or arise from said inventions, said applications, and said Letters Patent; said Assignee being hereby authorized to file patent applications in any or all countries on any or all said inventions in the name of the undersigned or in the name of said Assignee or otherwise as said Assignee may deem advisable, under the International Convention or otherwise; the Commissioner of Patents and Trademarks of the United States of America being hereby authorized to issue or transfer all said Letters Patent to said Assignee in accordance herewith; this assignment being under covenant, not only that full power to make the same is had by the undersigned, but also that such assigned right is not encumbered by any grant, license, or other right theretofore given, and that the undersigned will do all acts reasonably serving to ensure that the said inventions, patent applications and Letters Patent shall be held and enjoyed by said Assignee as fully and entirely as the same could have been held and enjoyed by the undersigned if this assignment had not been made, and particularly to execute and deliver to said Assignee all lawful documents including petitions, specifications, oaths, assignments, invention disclaimers, declarations, and lawful affidavits in

form and substance which may be requested by said Assignee, to furnish said Assignee with all facts relating to said inventions or the history thereof and any and all documents, photographs, models, samples or other physical exhibits which may embody said inventions, and to testify in any proceedings relating to said inventions, patent applications, and/or Letters Patent.

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert in this Assignment any further identification that may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

This Assignment is deemed to be effective at least as early as April 12, 2010 (the earliest priority date).

4/3/2013
Date

Bunyeoul Lee
Bunyeoul Lee

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Ji-Hae Park

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4/3 / 2013
Date

Seung-Hyun Do
Seung-Hyun Do

Attorney Docket No. 038779/425149

Client Ref. OPP20122620US