504026292 09/28/2016

PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------|----------------|
| Yusuke DOHI | 07/05/2016 |
| Kiyoshi FUKADA | 06/30/2016 |
| Takashi MATSUI | 06/30/2016 |
| Mikiya NAGAYAMA | 06/30/2016 |
| Narumi NANRI | 06/30/2016 |

RECEIVING PARTY DATA

| Name: | JFE Steel Corporation | |
|-------------------|-----------------------------|--|
| Street Address: | 2-3, Uchisaiwai-cho 2-chome | |
| Internal Address: | Chiyoda-ku | |
| City: | Tokyo | |
| State/Country: | Japan | |
| Postal Code: | 100-0011 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15129983 |

CORRESPONDENCE DATA

Fax Number: (703)836-2787

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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| ATTORNEY DOCKET NUMBER: | 172498 |
|-------------------------|-----------------|
| NAME OF SUBMITTER: | ALYSON STRAND |
| SIGNATURE: | /alyson strand/ |
| DATE SIGNED: | 09/28/2016 |

PATENT REEL: 039876 FRAME: 0475

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Total Attachments: 2

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PATENT REEL: 039876 FRAME: 0476

ASSIGNMENT (BEING FILED FOR DUAL PURPOSE UNDER 37 CFR 1.63(e)) For Application with Filing Date on or after September 16, 2012

ASSIGNMENT

| | Insert | (1) | Yusuke DOHI | (2) | Kiyoshi FUKADA | |
|------------------|---|------------------------------|---|--|--|--|
| (1-8) | Legal Name(s) | (3) | Takashi MATSUl | (4) | Mikiya NAGAYAMA | |
| | of Inventor(s) | (5) | Narumi NANRI | (6) | | |
| | | (7) | | (8) | | |
| | | the und | sideration of the sum of one doll dersigned, the receipt and suffici , and hereby does assign, transfer | ency of which are h | r good and valuable consideration paid to each of tereby acknowledged, each undersigned agrees to | |
| (9) | Insert Name of Assignee | (9) JFE STEEL CORPORATION | | | | |
| (10) | Insert Address of Assignee | (10) | 2-3, Uchisaiwai-cho 2-chome | , Chiyoda-ku, Tok | yo 100-0011 Japan | |
| | Insert Identification | the ent inventi contin | the right, title and interest for the ion, and in all applications for pa- uation, international, substitute a examination certificates that may | United States of A ttent including any nd reissue applicati be granted on the | | |
| (11) such Num | such as Title, Case Number, or Foreign | (11) | COAL MIXTURE, METHOD FOR PRODUCING COAL MIXTURE, AND METHOD FOR PRODUCING COKE | | | |
| | Application Number | | (PCT International Application,N | lo.PCT/JP2015/00161 | 3) | |
| | | (Attor | ney Docket No. |), 1 | filed on even date herewith or as | |
| (12) | Alternative | (12) | U.S. Application Number | | | |
| | Identification for | Intern | ational Application,No. | | | |
| | filed applications | filed | | | | |

- 1) Each undersigned agrees to execute all papers necessary in connection with any application and/or patent for the invention and also to execute separate assignments in connection with such applications and patents as the Assignee may deem necessary.
- 2) Each undersigned agrees to execute all papers necessary in connection with any interference or post-grant proceeding which may be declared concerning any application or patent for the invention and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference or post-grant proceeding.
- 3) Each undersigned agrees to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.
- 4) Each undersigned agrees to perform all affirmative acts which may be necessary to obtain, maintain or confirm by reissue or
- reexamination a grant of a valid United States patent to the Assignee.

 5) Each undersigned authorizes and requests the Commissioner of the U.S. Patent and Trademark Office to issue any and all patents resulting from said application(s) to the said Assignee, as Assignee of the entire interest, and covenants that he or she has full right to convey the entire interest herein assigned, and that he or she has not executed, and will not execute, any agreement(s) in conflict herewith, and agrees that this assignment is binding on Assignor and Assignor's heirs, successors, assigns and legal representatives.
- 6) Each undersigned hereby grants the firm of OLIFF PLC the power to insert on this assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document,

(13)Declaration

As an above named inventor, I hereby declare that:

I believe I am the original inventor or an original joint inventor of a claimed invention (or claimed design) in the above-identified application for which this declaration is being submitted.

The application was made or authorized to be made by me.

I have reviewed and understand the contents of the above-identified application, including the claims, and am aware of the duty to disclose to the Office all information known to me to be 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 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

> **PATENT REEL: 039876 FRAME: 0477**

In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s).

| Date | July 5, 2016 | Inventor Signature | Yusuke DOHI | (SEAL) |
|----------|--|---|--|-------------|
| Date | June 30, 2016 | Inventor Signature | Kiyoshi Fukada Kiyoshi FUKADA | (SEAL) |
| Date | June 30, 2016 | Inventor Signature | Takashi MATSUL Takashi MATSUI | (SEAL) |
| Date | June 30,2016 | Inventor Signature | MTKTYA NAGAYAMA Mikiya NAGAYAMA | (SEAL) |
| Date | June 30, 2016 | Inventor Signature | Natumi NANRI Natumi NANRI | (SEAL) |
| Date | | Inventor Signature | | (SEAL) |
| Date | | Inventor Signature | | (SEAL) |
| Date | | Inventor Signature | | (SEAL) |
| neither, | This assignment should preferably be signed then it should be signed before at least two w | i before: (a) a Notary Pub itnesses who also sign he | lic if within the U.S.A. (b) a U.S. Consul if outside there: | e U.S.A. If |
| Date | | Witness | | |
| Date | | Witness | | |