PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------|----------------|
| MEINHARD KUNTZ | 08/05/2018 |
| HEINRICH WECKER | 06/28/2018 |
| ALFONS KELNBERGER | 06/18/2018 |
| KILIAN FRIEDERICH | 07/13/2018 |
| MORITZ MESSMER | 07/16/2018 |

RECEIVING PARTY DATA

| Name: | CERAMTEC GMBH |
|-----------------|--------------------|
| Street Address: | CERAMTEC PLATZ 1-9 |
| City: | PLOCHINGEN |
| State/Country: | GERMANY |
| Postal Code: | 73207 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14892855 |

CORRESPONDENCE DATA

Fax Number: (212)318-3400

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: 2123183214

Email:natalia.platonova@nortonrosefulbright.comCorrespondent Name:NORTON ROSE FULBRIGHT US LLPAddress Line 1:1301 AVENUE OF THE AMERICAS

Address Line 2: JAMES CRAWFORD

Address Line 4: NEW YORK, NEW YORK 10019

| ATTORNEY DOCKET NUMBER: | CERA.P0288US |
|-------------------------|---------------------|
| NAME OF SUBMITTER: | JAMES R. CRAWFORD |
| SIGNATURE: | /James R. Crawford/ |
| DATE SIGNED: | 08/28/2018 |
| | |

Total Attachments: 10

PATENT REEL: 046720 FRAME: 0188

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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 CeramTec GmbH, CeramTec-Platz 1-9, 73207 Plochingen, GERMANY (hereinafter ASSIGNEE) all right, title and interest in and to his invention relating to

COMPONENT CONSISTING OF CERAMICS COMPRISING PORE CHANNELS

| as set forth in his United States Patent Application | | |
|--|-------|-------------------|
| executed concurrently herewith | | |
| executed on | | |
| x Serial No. filed 14/892,855 | filed | November 20, 2015 |

in and to said United States Patent Application including any and all divisions or continuations thereof and in and to any and all Letters Patent of the United States which may issue on any such application or for said invention, including any and all reissues or extensions thereof and all applications for Letters Patent which may be granted for said invention in any country or countries foreign to the United States, and all Letters Patent which may be granted for said invention in any country or countries foreign to the United States and all divisions, continuations, additions, extensions, renewals and reissues thereof and all rights of priority in any such country or countries based upon the filing of the said application for Letters Patent of the United States which are created by any law, treaty or international convention; to be held and enjoyed by said ASSIGNEE, its successors, legal representatives and assigns to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made;

Each of the undersigned hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all such Letters Patent to said ASSIGNEE, its successors or assigns in accordance herewith.

Each of the undersigned warrants and covenants that he has the full and unencumbered right to sell and assign the interests herein sold and assigned and that he has not executed and will not execute any document or instrument in conflict herewith;

Each of the undersigned further covenants and agrees that at any time upon request of said ASSIGNEE, its successors, legal representatives or assigns he will communicate to said ASSIGNEE, its successors, legal representatives or assigns all information known to him relating to said invention or patent application and that he will execute and deliver any papers, make all rightful oaths, testify in any legal proceedings and perform all other lawful acts deemed necessary or desirable by said ASSIGNEE, its successors, legal representatives or assigns to perfect title to said invention, to said application including divisions, continuations, reissues, extensions, additions and renewals thereof and to any and all Letters Patent which may be granted therefor or thereon, in said ASSIGNEE, its successors.



REEL: 046720 FRAME: 0190

or assigns or to assist said ASSIGNEE, its successors, legal representatives or assigns in obtaining, reissuing or enforcing Letters Patent for said invention;

Each of the undersigned hereby grants to all practitioners at 024972 the power to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

| Names and Signatures of Inventors: | |
|------------------------------------|----------|
| Meinstard Kuntz | <u> </u> |
| Heimich Wecker | Date |
| Alfons Kelmberger | Date |
| Kilian Friederich | Date |
| Katia Biotteau | Date |
| Moritz Messmer | Date |

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Names and Signatures of Inventors:

| Meinhard Kuntz/ | Date |
|-------------------|---------------------------|
| Heinrich Wecker | <u>98.06.70/6</u> Date |
| Alfons Keinberger | Date |
| Kilian Friederich | Date |
| Katia Biotreau | Date |
| Moritz Meccmar | Bata |

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ApplicationNo. 14/892,855

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| Meinhard Kuntz | Date |
|-------------------------------------|------------|
| Heinfrich Wecker Alfons Kelnberger | Date Date |
| Kilian Friederich | Date |
| Katia Biotteau | Date |
| Moritz Messmer | Date |

brney Docket No.: CERA.P0288US

Worldwide Rights

Assignment

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| Alfons Kelnberger | Date |
| Kilian Friederich |) Ling 17 17 2018 Date |
| Katia Biotteau | Date |
| Moritz Messmer | Date |

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| Alfons Kelnberger | Date |
| Kilian Friederich | Date |
| Katia Biotteau | Date |
| Morifz Messmer | 16/67/18 Date |