

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	CHANG HOON SHIN	03/22/2019
RECEIVING PARTY DATA		
Name:	KOREA GAS CORPORATION	
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PROPERTY NUMBERS Total: 1		
	Property Type	Number
	Application Number:	16336920
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DATE SIGNED:	03/27/2019	
Total Attachments: 2		
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ASSIGNMENT

I, Chang Hoon SHIN, who resides at 103-1304, 62, Ipbuk-ro 77beon-gil, Gwonseon-gu Suwon-si Gyeonggi-do 16365, Republic of Korea has made certain inventions or discoveries (or both) set forth in an application for Letters Patent of the United States of America entitled:

**METHOD FOR CALCULATING TORTUOUS HYDRAULIC DIAMETER OF
POROUS MEDIUM AND METHOD FOR ANALYZING FLOW IN POROUS MEDIUM
USING SAME**

which application was

☐ executed by the inventor(s) on the date of execution of this assignment, or

☒ described in an application for Letters Patent of the United States, filed on 29 September 2017 (International Filing Date), and accorded Serial No. PCT/KR2017/010970

And wherein

**KOREA GAS CORPORATION, a Korean University, having a place of business at
(Sinseo-dong) 120, Cheomdan-ro Dong-gu Daegu 41062, Republic of Korea**

which together with their successors and assigns are hereinafter collectively and severally called "Assignee", are desirous of acquiring the title, rights, benefits and privileges hereinafter recited, and of confirming the same or any part thereof heretofore acquired by Assignee.

Now, therefore, for valuable consideration furnished by Assignee to us, receipt and sufficiency of which we hereby acknowledge, we hereby, without reservation:

1. Assign and convey to and confirm in Assignee the entire right, title and interest in and to said inventions and discoveries, said application for Letters Patent of the United States of America, any and all other applications for Letters Patent on said inventions and discoveries in whatsoever countries, including all divisional, renewal, substitute, continuation and Convention applications based in whole or in part upon said inventions or discoveries or upon said applications, and any and all Letters Patent and reissues and extensions of Letters Patent granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said discoveries, said applications and said Letters Patent;

2. Authorize Assignee to file patent applications in any or all countries on any or all of said inventions and discoveries in our names or in the name of Assignee or otherwise as Assignee may deem advisable, under the International Convention or otherwise;

3. Authorize and request the Commissioner of Patents of the United States of America and the empowered officials of all other governments to issue or transfer all said Letters Patent to Assignee, as assignee of the entire right, title and interest therein or otherwise as Assignee may direct;

4. Warrant that we have not knowingly conveyed to others any right in said inventions, discoveries, applications or patents or any license to use the same or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that we have good right to assign the same to Assignee without encumbrance;

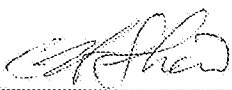
5. Bind our heirs and legal representatives, as well as ourselves, to do, upon Assignee's request and at its expense, but without additional consideration to us or them, all acts reasonably serving to assure that the said inventions and discoveries, the said patent applications and the said Letters Patent shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and enjoyed by us or our heirs or representatives if this assignment had not been made; and particularly to execute and deliver to Assignee all lawful application documents including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by Assignee; to communicate to Assignee all facts known to us relating to said inventions and discoveries or the history thereof; and to furnish Assignee with any and all documents, photographs, models, samples and other physical exhibits in our control or in the control of our heirs or legal representatives and which may be useful for establishing the facts of our conception, disclosures, and reduction to practice of said inventions and discoveries.

The effective date of this instrument is the date accompanying our signatures, herein below.

In testimony whereof we have affixed our signatures.

(Witness)

(Date)

 22, Mar, 2019

(Date)

Chang Hoon SHIN

(Witness)

(Date)