

<b>PATENT ASSIGNMENT COVER SHEET</b>
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EPAS ID: PAT7716123

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

**CONVEYING PARTY DATA**

Name	Execution Date
DONGSHIN HYDRAULICS CO., LTD.	10/26/2022
SUNGILTURBINE CO., LTD.	10/20/2022
DAEWOO ENGINEERING & CONSTRUCTION CO., LTD.	10/12/2022

**RECEIVING PARTY DATA**

<b>Name:</b>	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY
<b>Street Address:</b>	89, YANGDAEGIRO-GIL, IPJANG-MYEON,
<b>Internal Address:</b>	SEBUK-GU, CHUNGHEONGNAM-DO,
<b>City:</b>	CHEONAN-SI
<b>State/Country:</b>	KOREA, REPUBLIC OF
<b>Name:</b>	KOREA GAS CORPORATION
<b>Street Address:</b>	(JEONGJA-DONG) 171, DOLMAN-RO, BUNDANG-GU
<b>Internal Address:</b>	GYEONGGI-DO
<b>City:</b>	SEONGNAM-SI
<b>State/Country:</b>	KOREA, REPUBLIC OF
<b>Name:</b>	STX OFFSHORE & SHIPBUILDING CO., LTD.
<b>Street Address:</b>	(WONPO-DONG) 60, MYEONGJE-RO,
<b>Internal Address:</b>	JINHAE-GU, GYEONGSANGNAM-DO,
<b>City:</b>	CHANGWON-SI
<b>State/Country:</b>	KOREA, REPUBLIC OF

**PROPERTY NUMBERS Total: 1**

Property Type	Number
<b>Patent Number:</b>	10023821

**CORRESPONDENCE DATA**

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**Address Line 1:** LATHROP GPM LLP

**PATENT**

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**ATTORNEY DOCKET NUMBER:** 555884: HNT-030US

**NAME OF SUBMITTER:** BRIAN C. TRINQUE

**SIGNATURE:** /BRIAN C. TRINQUE/

**DATE SIGNED:** 12/28/2022

**Total Attachments: 9**

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## ASSIGNMENT

WHEREAS, we, DONGSHIN HYDRAULICS CO., LTD. of Busan, Korea, SUNGILTURBINE CO., LTD., of Busan, Korea, and DAEWOO ENGINEERING & CONSTRUCTION CO., LTD., of Seoul, Korea, are co-owners of a certain new and useful invention, described in the patent identified below:

**METHOD AND APPARATUS FOR IMPROVING HEAT TRANSFER AND REACTION EFFICIENCY OF GAS HYDRATE REACTOR USING SCRAPER**

**U.S. Patent No.: 10,023,821, issued July 17, 2018**

WHEREAS, KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY, having its principal place of business at 89, Yangdaegiro-gil, Ipjang-myeon, Sebuk-gu, Chungcheongnam-do, Cheonan-si, Korea, KOREA GAS CORPORATION, having its principal place of business at (Jeongja-dong) 171, Doiman-ro, Bundang-gu, Gyeonggi-do, Seongnam-si, Korea, and STX OFFSHORE & SHIPBUILDING CO., LTD., having its principal place of business at (Wonpo-dong) 60, Myeongje-ro, Jinhae-gu, Gyeongsangnam-do, Changwon-si, Korea, is desirous of acquiring all rights, title and interest in and to said inventions, said applications, and in and to any and all Letters Patents which may be granted for or upon said invention and applications in the United States of America and anywhere in the world.

NOW THEREFORE, to all whom it may concern, be it known that for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, we, DONGSHIN HYDRAULICS CO., LTD., SUNGILTURBINE CO., LTD., and DAEWOO ENGINEERING & CONSTRUCTION CO., have sold, assigned and transferred, and by these presents to sell, assign and transfer unto the said KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY, KOREA GAS CORPORATION, and STX OFFSHORE & SHIPBUILDING CO., LTD., the full and exclusive right, title and interest, throughout the world, in, to and under the following:

- (a) the inventions as set forth and described, for example, in the patent application specifications identified above;
- (b) all patent applications identified above;
- (c) any and all patent applications, including Patent Cooperation Treaty (PCT) applications, directed to the inventions as set forth and described, for example, in the patent application specifications identified above;
- (d) any and all refilings, divisions, continuations, and continuations-in-part of those patent applications;
- (e) any and all patents of the United States of America which may issue from any of the above items;
- (f) any and all reissue and reexamination certificates of those patents;
- (g) any and all applications for the inventions filed in any and all countries foreign to the United States of America;
- (h) any and all refilings, divisions, and continuations of those foreign-filed applications;
- (i) any and all patents, certificates, and registrations of countries foreign to the United States of America which may issue from those foreign-filed applications, refilings, divisions, and continuations;
- (j) any and all extensions of, and additions to, the foreign-filed applications and patents, certificates, and registrations related thereto;
- (k) the right to claim priority to any of the foregoing; and
- (l) any and all claims, causes of action, and damages for past, present, and future infringement or other unauthorized use of the above items, along with the right to sue and to collect damages and other relief from any and all parties.

We, DONGSHIN HYDRAULICS CO., LTD., SUNGILTURBINE CO., LTD., and DAEWOO ENGINEERING & CONSTRUCTION CO., further agree that we

will promptly execute and deliver to KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY, KOREA GAS CORPORATION, and STX OFFSHORE & SHIPBUILDING CO., LTD., or its legal representatives any and all papers, instruments, and affidavits required to apply for, obtain, maintain, issue, and enforce all of the items listed above.

All of the above shall be held and enjoyed by KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY, KOREA GAS CORPORATION, and STX OFFSHORE & SHIPBUILDING CO., LTD., and its successors, legal representatives, and assigns for their own use and benefit, for the full term for which the protections listed above may be granted, and DONGSHIN HYDRAULICS CO., LTD., SUNGILTURBINE CO., LTD., and DAEWOO ENGINEERING & CONSTRUCTION CO. authorize and request the Commissioner of Patents and Trademarks of the United States and of all foreign countries to issue any Patents granted for said inventions, whether on an application for said invention set forth above, or on any subsequently filed provisional, non-provisional, divisional, continuation, continuation-in-part, reissue, or other related application, to KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY, KOREA GAS CORPORATION, and STX OFFSHORE & SHIPBUILDING CO., LTD., its successors and assigns, as the assignee of their entire interest in said inventions and applications.

ASSIGNOR:

DONGSHIN HYDRAULICS CO., LTD.

Signature

Date:

Oct 26, 2022

Signed in my presence and acknowledged to be an assignment of the application herein above referred to:

WITNESS

KyungSang Nam Do Changwon city  
Signed At (City/State)

Kim Byung Goo  
Name

Signature

Oct 22, 2022  
Date

ASSIGNOR:

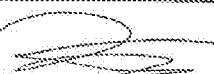
SUNGIL TURBINE CO., LTD.

  
\_\_\_\_\_  
Signature

2022 - 10 - 20  
\_\_\_\_\_  
Date:

Signed in my presence and acknowledged to be an assignment of the application herein above referred to:

WITNESS

\_\_\_\_\_  
Signed At (City/State)  
BUSAN / KOREA  
\_\_\_\_\_  
Name  
SEONG YOUNG, KIM  
\_\_\_\_\_  
Signature  
  
\_\_\_\_\_  
Date  
2022 - 10 - 20

**ASSIGNOR:**

**DAEWOO ENGINEERING & CONSTRUCTION CO.**

Jungwon Baek            12. OCT. 2022  
Signature      Date:

Signed in my presence and acknowledged to be an assignment of the application herein above referred to:

**WITNESS**

Seoul, Korea  
Signed At (City/State)  
Yewon Shin  
Name  
[Signature]  
Signature  
12. OCT. 2022  
Date



ASSIGNEE:

KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY

이연성

Oct. 26, 2022

Signature

Date:

EON SEONG LEE, Principal officer

Name and Title:

Signed in my presence and acknowledged to be an assignment of the application herein above referred to:

WITNESS

Cheonan-Si, Republic of Korea

Signed At (City/State)

Lee, Soon-Yung

Name

이순영

Signature

Oct 26, 2022

Date

**ASSIGNEE:**

**KOREA GAS CORPORATION**

*[Handwritten Signature]*

*2022. 12. 06.*

Signature

Date:

*Young Kweon, Park Head of Dept.*

Name and Title:

Signed in my presence and acknowledged to be an assignment of the application herein above referred to:

**WITNESS**

*Daegu, South Korea*

Signed At (City/State)

*Hee Wan, Jung*

Name

*[Handwritten Signature]*


Signature

*2022. 12. 06.*

Date

ASSIGNEE:

STX OFFSHORE & SHIPBUILDING CO., LTD.

  
Signature

Date:

11, Oct., 2022

D. J. Kang / Team manager  
Name and Title:

Signed in my presence and acknowledged to be an assignment of the application herein above referred to:

WITNESS

Changwon-si, Korea  
Signed At (City/State)

J. U. PARK  
Name

J. U. Park  
Signature

11, Oct., 2022  
Date