## 505492379 05/24/2019

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5539183

SUBMISSION TYPE:		NEW ASS	NEW ASSIGNMENT			
NATURE OF CONVEYANCE:		ASSIGNM	ASSIGNMENT			
CONVEYING PARTY D	ΑΤΑ					
	Name	Name				
BYONGHYO SHIM				05/22/2019		
RECEIVING PARTY DA	ТА					
Name:	SEOUI	SEOUL NATIONAL UNIVERSITY R&DB FOUNDATION				
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City:	SEOUL	-				
State/Country:	KORE	A, REPUBLIC OF	=			
Postal Code:	08826	08826				
PROPERTY NUMBERS	6 Total: 1					
Property Type		١	Number			
Application Number: 1646		16463855				
CORRESPONDENCE I Fax Number: <i>Correspondence will &amp;</i> <i>using a fax number, if</i> Phone: Email: Correspondent Name: Address Line 1: Address Line 4:	e sent to provideo		sight-pat.com E EAF CT.			
		•••••••	NIA 22182			
	UMBER:	SJ13.SNF				
ATTORNEY DOCKET N			8002			
ATTORNEY DOCKET N NAME OF SUBMITTER:		SJ13.SNF	8002 IO LEE			
ATTORNEY DOCKET N NAME OF SUBMITTER: SIGNATURE:		SJ13.SNF SEUNG H	R002 IO LEE D Lee/			
ATTORNEY DOCKET N NAME OF SUBMITTER: SIGNATURE: DATE SIGNED:		SJ13.SNF SEUNG H /Seung Ho 05/24/201	R002 IO LEE D Lee/	ath/Declar	ation (37 CFR 1.63).	

Attorney Docket No. \_\_\_\_\_ Client Ref. No. \_\_\_\_\_

#### **DECLARATION AND ASSIGNMENT**

# Title of Invention: APPARATUS AND METHOD FOR SPARSIFYING CHANNEL USING BEAMFORMING

As the below named inventor, I hereby declare that:

This declaration is directed to:

the attached application (Attorney Docket Number \_\_\_\_\_\_); OR
 United States application or PCT international application No. \_\_\_\_\_\_\_;
 filed on \_\_\_\_\_\_;

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

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.

Whereas, each undersigned inventor (hereinafter referred to as "ASSIGNOR") has made certain inventions, improvements, and discoveries (herein referred to as the "INVENTION") disclosed in the above-identified patent application (herein referred to as the "APPLICATION");

 Whereas,
 Secul National University R&DB Foundation
 (hereinalter referred to as "ASSIGNEE"), organized and operating under the laws of Republic of Korea, whose post office

 address is
 1. Gwanak-ro, Gwanak-gu, Secul. 08826 Republic of Korea, is desirous of securing the entire right, title, and interest in and to the INVENTION in all countries throughout the world, and in and to the APPLICATION for United States Letters Patent on this INVENTION and the Letters Patent to be issued upon this APPLICATION;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, ASSIGNOR hereby sells or has sold, assigns or has assigned, and otherwise transfers or has transferred to ASSIGNEE, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the INVENTION, the APPLICATION, and any and all other patent applications and patents for the INVENTION which may be applied for or granted therefor in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, continuations-in-part, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, ASSIGNOR hereby authorizes and requests the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the INVENTION, to ASSIGNEE, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the same to be held and enjoyed by ASSIGNEE, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by ASSIGNOR had this Assignment not been made, and ASSIGNOR agrees to execute any and all documents and instruments and perform all lawful acts reasonably related to recording this Assignment or perfecting title to the INVENTION, the APPLICATION, and all related patents and applications, in ASSIGNÉE, its successors, legal representatives, whenever requested by ASSIGNEE, its successors, legal representatives, and assigns;

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AND, ASSIGNOR HEREBY covenants that ASSIGNOR has the full right to convey the interest assigned by this Assignment, and ASSIGNOR has not executed and will not execute any agreement in conflict with this Assignment;

AND, ASSIGNOR HEREBY further covenants and agrees that ASSIGNOR will communicate to said ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR respecting said APPLICATION, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing and reissue applications, make all rightful oaths and generally do everything possible to aid the said ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said INVENTION in all countries.

Legal Name of Inventor: Byonghyo SHIM

Signature:

Date: 05/22/2019

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### PATENT **REEL: 049274 FRAME: 0490**

**RECORDED: 05/24/2019**