

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
DARRAGH RYAN	08/05/2016
SURESH PILLAI	08/05/2016
JOANNA CARROLL	08/05/2016
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State/Country:	IRELAND
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15104465
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NAME OF SUBMITTER:	JEROMYE V. SARTAIN
SIGNATURE:	/Jeromye V. Sartain/
DATE SIGNED:	08/05/2016
Total Attachments: 4	
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source=2016-08-05-Signed Assignment-HMCL.005.USN#page2.tif	
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ASSIGNMENT

THIS ASSIGNMENT is made by Darragh Ryan having a principal place of residence at 4 Castlegate Square, Adamstown, Co. Dublin, Ireland, Suresh Pillai having a principal place of residence at 158 Rusheen Ard, Caltragh, Sligo, Co. Sligo, Ireland, and Joanna Carroll having a principal place of residence at 113 St. Maelruans Park, Dublin 24, Ireland, (hereafter, together with any successors, legal representatives, or assigns thereof, "ASSIGNORS") to Dublin Institute of Technology, an educational institution duly organized and existing under and by the laws of Ireland and having its principal place of business at 143-149 Rathmines Road, Dublin 6, Ireland, (hereafter, together with any successors, legal representatives, or assigns thereof, "ASSIGNEE").

WHEREAS, ASSIGNORS have invented and own rights in, to and under a new and useful invention for which an application(s) for Letters Patent has been filed as indicated below (hereafter "Invention");

PCT Patent Application	filed December 12, 2014	bearing Serial No. PCT/EP2014/077561
U.S. Patent Application	filed June 14, 2016	bearing Serial No. US 15/104,465

WHEREAS, ASSIGNORS believe themselves to be the original and true inventors of the Invention;

WHEREAS, ASSIGNEE desires to acquire the Invention and improvements thereto;

AND WHEREAS, ASSIGNORS and ASSIGNEE desire to have a recordable instrument assigning ASSIGNEE as owners of the entire right, title and interest in, to, and under the Invention and improvements thereto owned by ASSIGNORS;

NOW THEREFORE, for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ASSIGNORS do hereby sell, assign, transfer, convey, endorse, and hereby set over unto ASSIGNEE the full and exclusive right, title and interest in, to and under the Invention to be held and enjoyed by ASSIGNEE, as fully and entirely as the same would have been held and enjoyed by ASSIGNORS had this assignment and sale not been made including the full and exclusive right, title and interest in, to and under 1) any patent application, or any other legal instrument equivalent thereof, including, without limitation, continuation, division, continuation-in-part, substitute, reexamination, renewal, inventor's certificate, and utility model, which has been or may be submitted therefor and thereon anywhere in the World, such term defined herein as including the United States of America, its territorial possessions, and any and all foreign countries under national laws or under the provisions of the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, or any other international treaty equivalent thereof; 2) any Letters Patent, or any other legal instrument equivalent thereof, which has been or may be granted therefor and thereon, in the World, for the full term or terms for which the same may be granted; 3) any reissue, extension, or any other legal instrument equivalent thereof, on any patent application or Letters Patent which has been or may be granted therefor and thereon in the World; 4) any right to collect damages for any past infringement; and 5) any right to claim priority to a filing date, or any other legal equivalent thereof, which has been or may be claimed by any patent application or Letters Patent therefor and thereon in the World.

ASSIGNORS hereby covenant and agree to perform any lawful action when deemed essential by and to ASSIGNEE's full enjoyment, protection, enforcement and title in, to and under the Invention and rights hereby transferred, including, but not limited to, promptly communicating

and providing any and all known and accessible facts, data or any other pertinent information; promptly executing and delivering any and all papers, documents, forms, declarations, oaths, affidavits or any other legal instrument; promptly assisting and participating in any and all depositions, hearings, proceedings, trials, appeals, or any other legal procedure; promptly testifying under oath in any and all interference, post grant review, litigation or any other administrative or judicial proceeding; and promptly completing any and all actions necessary or desirable to carry out any and all purposes thereof, relating to any and all proceedings in connection with the submission, procurement, issuance, maintenance, enforcement or defense of the invention and rights hereby transferred.

IN TESTIMONY WHEREOF, I hereunder set my hand this 5th day of August, 2016.

ASSIGNOR

Darragh Ryan
Signature

Darragh Ryan
Printed Name

IN WITNESS WHEREOF, I hereunder set my hand this 5th day of August, 2016.

WITNESS

Joanna Carroll
Signature

JOANNA CARROLL
Printed Name

IN WITNESS WHEREOF, I hereunder set my hand this 5th day of August, 2016.

WITNESS

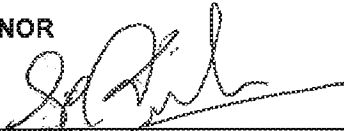
Marie Walsh
Signature

MARIE WALSH
Printed Name

Docket No. 3IPHM1.0005US

IN TESTIMONY WHEREOF, I hereunder set my hand this 5th day of August, 2016.

ASSIGNOR



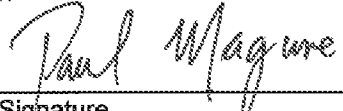
Signature

Suresh Pillai

Printed Name

IN WITNESS WHEREOF, I hereunder set my hand this 5th day of August, 2016.

WITNESS




Signature

PAUL MAGUIRE

Printed Name

IN WITNESS WHEREOF, I hereunder set my hand this 5th day of August, 2016.

WITNESS



Signature

KIERAN O'CONNELL

Printed Name

Docket No. 3IPHM1.0005US

IN TESTIMONY WHEREOF, I hereunder set my hand this 5th day of August, 2016.

ASSIGNOR

Joanna Carroll
Signature
Joanna Carroll
Printed Name

IN WITNESS WHEREOF, I hereunder set my hand this 0th day of August, 2016.

WITNESS

Darragh Ryan
Signature
DARRAGH RYAN
Printed Name

IN WITNESS WHEREOF, I hereunder set my hand this 5th day of August, 2016.

WITNESS

Marie Walsh
Signature
MARIE WALSH
Printed Name