

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5873369

|   |  |
|---|--|
| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                                 |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT                                     |
| <b>CONVEYING PARTY DATA</b>   |  |
| <b>Name</b>   | <b>Execution Date</b>                          |
| ZHENGUO LU  | 10/08/2019                                     |
| JIAREN LIU  | 10/08/2019                                     |
| PHILIP POOLE  | 10/08/2019                                     |
| CHUNYING SONG   | 10/08/2019                                     |
| SHOUDE CHANG  | 10/08/2019                                     |
| <b>RECEIVING PARTY DATA</b>   |  |
| <b>Name:</b>  | NATIONAL RESEARCH COUNCIL OF CANADA            |
| <b>Street Address:</b>  | 1200 MONTREAL ROAD                             |
| <b>Internal Address:</b>  | M55 ROOM 29                                    |
| <b>City:</b>  | OTTAWA   |
| <b>State/Country:</b>   | CANADA   |
| <b>Postal Code:</b>   | K1A 0R6  |
| <b>PROPERTY NUMBERS Total: 3</b>  |  |
| <b>Property Type</b>  | <b>Number</b>                                  |
| Application Number:   | 62539113                                       |
| Application Number:   | 16050137                                       |
| Application Number:   | 16050162                                       |
| <b>CORRESPONDENCE DATA</b>  |  |
| <b>Fax Number:</b>  |  |
| <i>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.</i> |  |
| <b>Email:</b>   | NRC.IPManagement-GestionPI.CNRC@nrc-cnrc.gc.ca |
| <b>Correspondent Name:</b>  | KENNETH MURPHY                                 |
| <b>Address Line 1:</b>  | 1200 MONTREAL ROAD                             |
| <b>Address Line 2:</b>  | M55 ROOM 29                                    |
| <b>Address Line 4:</b>  | OTTAWA, CANADA K1A 0R6                         |
| <b>ATTORNEY DOCKET NUMBER:</b>  | 2017-033                                       |
| <b>NAME OF SUBMITTER:</b>   | KENNETH MURPHY                                 |
| <b>SIGNATURE:</b>   | /Kenneth Murphy/                               |

|  |            |
|--|------------|
| <b>DATE SIGNED:</b>  | 12/18/2019 |
| <b>Total Attachments: 5</b><br>source=2017-033_Assignment_signed#page1.tif<br>source=2017-033_Assignment_signed#page2.tif<br>source=2017-033_Assignment_signed#page3.tif<br>source=2017-033_Assignment_signed#page4.tif<br>source=2017-033_Assignment_signed#page5.tif |            |

### CONFIRMATORY ASSIGNMENT

WHEREAS, we, **LU, Zhenguo**, a citizen of **Canada** residing at **151 Copperwood Street, Ottawa, Ontario, K1C 7S3, Canada**; **LIU, Jiaren**, a citizen of **Canada** residing at **5 Norgold Crescent, Ottawa, Ontario, K2T 1J1, Canada**; **POOLE, Philip**, a citizen of **Canada** residing at **48 Dunvegan Road, Ottawa, Ontario K1K 3G3, Canada**; **SONG, Chunying**, a citizen of **Canada** residing at **1015-1591 Riverside Drive, Ottawa, Ontario, K1G 4A7** and **CHANG, Shoude**, a citizen of **Canada**, residing at **1720 Jobin Crescent, Ottawa, Ontario, K1J 1C5, Canada**, in the course of our work at and/or for the National Research Council of Canada have made an invention (hereinafter the "Invention") for which we have made application for Letters Patent entitled

### STABLE LINEWIDTH NARROWING OF A COHERENT COMB LASER

which was filed in the **United States of America** on July 31, 2017 under **United States Provisional Patent Application No. 62/539,113**, filed in the **United States of America** on July 31, 2018 under **United States Application No. 16/050,137**, filed in the **United States** on July 31, 2018 under **United States Application No. 16,050,162**, filed in the **Canadian Patent Office** on July 31, 2018 under **Canadian Patent Application No. 3,012,938**, filed in the **Canadian Patent Office** on July 31, 2018 under **Canadian Patent Application No. 3,012,924** (hereinafter the "Application")

AND WHEREAS, **National Research Council of Canada**, a Departmental Corporation forming part of the Government of Canada, created by an act of Parliament, the *National Research Council Act*, R. S. C. 1985, c. N-15, having its principal offices at 1200 Montreal Road, Ottawa, Ontario K1A 0R6, CANADA, is our employer and/or maintains facilities or equipment that we used in making the Invention, and is the owner of our rights in the Invention by action of law, namely s. 3 of *The Public Servants Inventions Act* of Canada, or by agreement;

NOW, THEREFORE, in consideration of having been provided with an opportunity to participate in scientific research at the National Research Council of Canada and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, we, **LU, Zhenguo, LIU, Jiaren, POOLE, Philip, CHANG, Shoude and SONG, Chun-Ying** hereby confirm that we did transfer to the National Research Council of Canada all of our right, title and interest in and to the Invention in all countries of the world and in and to the Application and all subsequent patent applications based thereon, including any regular patent applications that claim priority therefrom, and any and all continuations, divisions and reissues of any of the foregoing, together with the right to claim priority from the Application under the provisions of any international agreements and national laws including the International Convention for the Protection of Industrial Property.


AND we hereby confirm that we have the right to make the assignment herein free of any encumbrances or interests of any other parties,

AND we hereby authorize the Commissioner of Patents and Trademarks, and any official of any country authorized to issue patents, to issue any Letters Patent for the Invention to National Research Council of Canada, to the extent that the same would have been issued to us in the event that ownership rested with us as inventors.

This Confirmatory Assignment is effective as of **July 31, 2017**.

File No. 2017-033


Executed on Ottawa

  
LU, Zhenguo

**Declaration by Witness**

I, Siegfried Junz, whose full post office address is  
2168 Blue Jay Cres. Ottawa ON, K1J 6B1  
say:

That I was personally present and did hear and see, **LU, Zhenguo**, who is  
personally known to me duly sign the above Confirmatory Assignment and confirm  
having read and understood all that it contains.

  
(signature of witness)

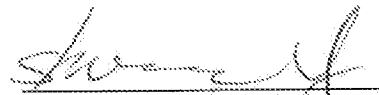
Executed on Ottawa

  
LIU, Jiaren

**Declaration by Witness**

I, Shurui Wang, whose full post office address is  
716 Morningstar Way, Orleans, ON K1W0G6  
say:

That I was personally present and did hear and see, **LIU, Jiaren**, who is  
personally known to me duly sign the above Confirmatory Assignment and confirm  
having read and understood all that it contains.

  
(signature of witness)

File No. 2017-033

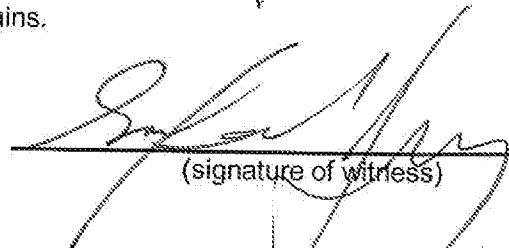
Executed on OTAWA

  
\_\_\_\_\_  
POOLE, Philip


**Declaration by Witness**

I, Siegfried Janz, whose full post office address is  
2168 Blue Jay Cross, Ottawa, ON, K1J 6B1  
say:

That I was personally present and did hear and see, **POOLE, Philip**, who is personally known to me duly sign the above Confirmatory Assignment and confirm having read and understood all that it contains.

  
\_\_\_\_\_  
(signature of witness)


Executed on Ottawa

  
\_\_\_\_\_  
CHANG, Shoude

**Declaration by Witness**

I, ZHENGUO LU, whose full post office address is  
151 Copperwood St. Ottawa, ON K1C 7S3  
say:

That I was personally present and did hear and see, **CHANG, Shoude** who is personally known to me duly sign the above Confirmatory Assignment and confirm having read and understood all that it contains.

  
\_\_\_\_\_  
(signature of witness)

File No.2017-033

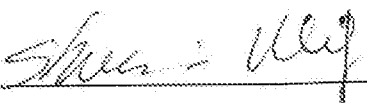
Executed on Ottawa

  
SONG, Chun-Ying

**Declaration by Witness**

I, Shurui Wang, whose full post office address is  
716 Morningstar Way, Orleans, ON  
say:

That I was personally present and did hear and see, **SONG, Chun-Ying** who  
is personally known to me duly sign the above Confirmatory Assignment and confirm  
having read and understood all that it contains.

  
(signature of witness)