

## PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT																				
NATURE OF CONVEYANCE:	ASSIGNMENT																				
CONVEYING PARTY DATA																					
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82376-A-PCT-US/JPW/GJG/VA

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ALISSA M. ROLAND

Signature:

82376-A-PCT-US/AMR/for Gary J. Gershik

Date:

12/03/2013

**Total Attachments: 5**

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***Assignment of Non-Provisional Application***

*In consideration of One Dollar (\$1.00), and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the undersigned,*

Jingyue JU of 267 Marietta Street, Englewood Cliffs, NJ 07632, United States of America;

Shiv KUMAR of 21 Muirhead Court, Belle Mead, NJ 08502, United States of America;

Zengmin LI of 29-10 137th Street, Suite LC, Flushing, NY 11354, United States of America;

Chuanjuan TAO of 605 West 112 Street, Apt 6I, New York, NY 10025, United States of America;

Minchen CHIEN of 273 Tenafly Road, Tenafly, NJ 07670, United States of America;

James J. RUSSO of 60 Haven Avenue, Apt. 25E, New York, NY 10032, United States of America;

Sergey KALACHIKOV of 620 W 171st Street, Apt. 4D, New York, NY 10032, United States of America;

Ken SHEPARD of 158 Evan Drive, Ossining, NY 10562, United States of America; and

Jacob Karl ROSENSTEIN of 205 West 103rd St, Apt 6D, New York, NY 10025, United States of America,

*Hereby sell, assign and transfer to The Trustees of Columbia University in the City of New York, a not for profit corporation of the State of New York, having a place of business at 412 Low Memorial Library, 535 W. 116th St., New York, NY 10027, in the County of New York and State of New York, its successors, assigns and legal representatives, the entire right, title and interest for all countries, in and to any and all inventions which are disclosed and claimed, and any and all inventions which are disclosed but not claimed, in the application for United States Patent, which has been executed by the undersigned on September 24, 2013, September 24, 2013, September 24, 2013, September 25, 2013, September 24, 2013, September 24, 2013, September 24, 2013*

*and is entitled*

DNA SEQUENCING BY SYNTHESIS USING MODIFIED NUCLEOTIDES AND  
NANOPORE DETECTION

(U.S. Serial No. 13/994,431, § 371 national stage of PCT International Application No.

*JPW Rev. April 19, 2007*

PCT/US2011/065640, filed December 16, 2011, claiming the benefit of U.S. Provisional Applications Nos. 61/557,558, filed November 9, 2011 and 61/424,480, filed December 17, 2010)

*and in and to said application and all divisional, continuing, substitute, renewal, reissue, and all other applications for U.S. Letters Patent or other related property rights in any and all foreign countries which have been or shall be filed on any of said inventions disclosed in said application; and in and to all original and reissued patents or related foreign documents which have been or shall be issued on said inventions;*

***Authorize and request** the Commissioner for Patents of the United States to issue to said Assignee, the corporation above named, its successors, assigns and legal representatives, in accordance with this assignment, any and all United States Letters Patent on said inventions or any of them disclosed in said application;*

***Agree** that said Assignee may apply for and receive foreign Letters Patent or rights of any other kind for said inventions, or any of them; and may claim, in applications for said foreign Letters Patent or other rights, the priority of the aforesaid United States patent application under the provisions of the International Convention of 1883 and later modifications thereof, under the Patent Cooperation Treaty, under the European Patent Convention or under any other available international agreement; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns and legal representatives, to carry out in good faith the intent and purpose of this assignment, the undersigned or the undersigned's executors or administrators will, for the United States and all foreign countries, execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications or other documents on any and all said inventions; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to said Assignee, its successors, assigns and representatives, all facts known and documents available to the undersigned*

JPW Rev. April 19, 2007

relating to said inventions and the history thereof; testify in all legal proceedings; and generally do everything possible which said Assignee, its successors, assigns or representatives shall consider desirable for aiding in securing, maintaining and enforcing proper patent protection for said inventions and for vesting title to said inventions and all applications for patents or related foreign rights and all patents on said inventions, in said Assignee, its successors, assigns and legal representatives; and

**Covenant** with said Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

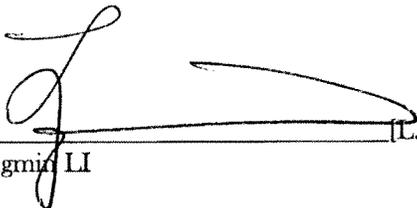
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\_\_\_\_\_[L.S.]  
Jingyue JU

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Shiv KUMAR

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Chuanjuan Tao [L.S.]  
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Sergey Kalachikov [L.S.]  
Sergey KALACHIKOV

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Witness: \_\_\_\_\_ [signature]  
\_\_\_\_\_ [printed name]  
\_\_\_\_\_ [address]  
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Sergey Kalachikov [LS]

Date: 4/3/2012  
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NY, NY 10027

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Ken Shepard

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NY, NY 10027

[Signature] [LS]  
Jacob Karl Rosenstein