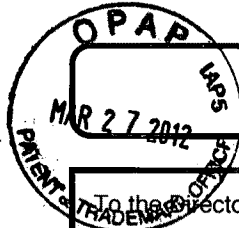


03/29/2012



RI



103642669

R SHEET

To the Director of the US Patent and Trademark Office: Please record documents or the new address(es) below.

3-27-12

**1. Name of conveying party(ies):** Ravindra Revanur Aleksandr Noy  
 Valentin Lulevich Olgica Bakajin  
 Il Juhn Roh  
 Jennifer E. Klare  
 Sangil Kim

Additional name(s) of conveying party(ies) attached?  Yes  No

**2. Name and address of receiving party(ies):**  
 Name: Porifera, Inc.  
 Street address: 3507 Breakwater Ave  
 City: Hayward State: CA Zip: 94545 Country: USA  
 Additional name(s) and address(es) attached?  Yes  No

**3. Nature of conveyance/Execution Date(s):**

Assignment  Joint Research Agreement  
 Security Agreement  Government Interest Assignment  
 Merger  Executive Order 9424m Confirmatory License  
 Change of Name  Other

Execution Date(s): 3/21/12

**4. Application or patent number(s):**

A. Patent Application No.(s) 13/428843 B. Patent No.(s) C. Agent Ref No.(s) PRF-104/US

This document is being filed together with a new application.  
 Additional numbers attached?  Yes  No

**5. Name and address to whom correspondence concerning document should be mailed:**  
 Name: Lumen Patent Firm  
 Street address: 350 Cambridge Ave., Suite 100  
 City: Palo Alto State: CA Zip: 94306 Country: USA  
 Phone No.: 650-424-0100 Fax No.: 650-424-0141 Email: admin@lumen.com

**6. Total number of applications and patents involved: 1**

**7. Total fee (37 CFR 1.21(h) & 3.41): \$ 40**  Authorized to be charged by credit card

**8. Payment information:**  
 a. Credit Card Last 4 Numbers: 5900 Credit Card Expiration Date: 10/2012

**9. Signature:**  
 Signature / Robert Lodenkamper / Reg.No. 55,399  
 Printed Name Robert Lodenkamper  
 Date 3/23/12

03/27/2012 MBLANCO 00000061 13428843  
 01 FC:0021 40.00

Total number of pages including cover sheet, attachments and documents: 8

**ASSIGNMENT OF INVENTION AND PATENT**

This Assignment of Invention and Patent (the "Assignment") is made and effective as of **March 21, 2012**, by and between **Ravindra Revanur**, an individual residing in **Fremont, CA, USA**, (the "Assignor") and **Porifera, Inc.**, an entity whose address is **3507 Breakwater Ave, Hayward, CA 94545, USA** (the "Assignee").

1) For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns and transfers to Assignee and the successors and assigns of Assignee, its entire right, title and interest in and to (i) the invention or inventions described in US patent application filed **herewith**, naming inventor(s) **Ravindra Revanur, Valentin Lulevich, Il Juhn Roh, Jennifer E. Klare, Sangil Kim, Aleksandr Noy, Olgica Bakajin**, entitled **Membranes having aligned 1-D nanoparticles in a matrix layer for improved fluid separation** (the "Application") naming Assignor as an inventor, (ii) any and all patent applications (whether provisional or non-provisional) relating to said invention(s), including all continuations, continuations-in-part, divisions, substitutes, reissues or renewals thereof, in any and all countries, (iii) any and all patents relating to such invention(s) in any and all countries that may be granted on any such application(s), including all reissues or extensions of any such patents and (iv) any and all domestic and foreign rights of priority resulting from the filing of the Application.

2) Assignor hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into by Assignor which would conflict with this Assignment. Assignor represents and warrants to Assignee that at the time of the execution and delivery of this Assignment, Assignor solely owns (or jointly owns, if the invention(s) were jointly made) the entire right, title and interest in and to said invention(s).

3) Assignor agrees that Assignee may apply for foreign patents relating to said invention(s) and irrevocably authorizes Assignee and grants Assignee the right to do so.

4) Assignor agrees, on request and without further consideration, but at the expense of Assignee, to sign all lawful papers, make all rightful oaths, and give any required testimony in any legal proceedings relating to said invention(s), and to generally aid Assignee, or its successors or assigns to obtain and enforce patent protection for said invention(s) in any and all countries.

5) Assignor authorizes and requests any official whose duty it is to issue patents to issue any patent on said invention(s) to Assignee, as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made.

6) This Assignment shall bind and inure to the benefit of the successors, assigns and personal representatives of the respective parties.

Assignor has executed this Assignment as of the Effective Date of **March 21, 2012**.

Assignor: **Ravindra Revanur**

Signature: \_\_\_\_\_

*R. Revanur*

## ASSIGNMENT OF INVENTION AND PATENT

This Assignment of Invention and Patent (the "Assignment") is made and effective as of **March 21, 2012**, by and between **Valentin Lulevich**, an individual residing in **Berkeley, CA, USA**, (the "Assignor") and **Porifera, Inc.**, an entity whose address is **3507 Breakwater Ave, Hayward, CA 94545, USA** (the "Assignee").

1) For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns and transfers to Assignee and the successors and assigns of Assignee, its entire right, title and interest in and to (i) the invention or inventions described in US patent application filed **herewith**, naming inventor(s) **Ravindra Revanur, Valentin Lulevich, Il Juhn Roh, Jennifer E. Klare, Sangil Kim, Aleksandr Noy, Olgica Bakajin**, entitled **Membranes having aligned 1-D nanoparticles in a matrix layer for improved fluid separation** (the "Application") naming Assignor as an inventor, (ii) any and all patent applications (whether provisional or non-provisional) relating to said invention(s), including all continuations, continuations-in-part, divisions, substitutes, reissues or renewals thereof, in any and all countries, (iii) any and all patents relating to such invention(s) in any and all countries that may be granted on any such application(s), including all reissues or extensions of any such patents and (iv) any and all domestic and foreign rights of priority resulting from the filing of the Application.

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Assignor has executed this Assignment as of the Effective Date of **March 21, 2012**.

Assignor: **Valentin Lulevich**

Signature: \_\_\_\_\_



Lumen Ref.: PRF-104/US  
PID: 17300 IID: 4601

## ASSIGNMENT OF INVENTION AND PATENT

This Assignment of Invention and Patent (the "Assignment") is made and effective as of **March 21, 2012**, by and between **Il Juhn Roh**, an individual residing in **San Ramon, CA, USA**, (the "Assignor") and **Porifera, Inc.**, an entity whose address is **3507 Breakwater Ave, Hayward, CA 94545, USA** (the "Assignee").

1) For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns and transfers to Assignee and the successors and assigns of Assignee, its entire right, title and interest in and to (i) the invention or inventions described in US patent application filed **herewith**, naming inventor(s) **Ravindra Revanur, Valentin Lulevich, Il Juhn Roh, Jennifer E. Klare, Sangil Kim, Aleksandr Noy, Olgica Bakajin**, entitled **Membranes having aligned 1-D nanoparticles in a matrix layer for improved fluid separation** (the "Application") naming Assignor as an inventor, (ii) any and all patent applications (whether provisional or non-provisional) relating to said invention(s), including all continuations, continuations-in-part, divisions, substitutes, reissues or renewals thereof, in any and all countries, (iii) any and all patents relating to such invention(s) in any and all countries that may be granted on any such application(s), including all reissues or extensions of any such patents and (iv) any and all domestic and foreign rights of priority resulting from the filing of the Application.

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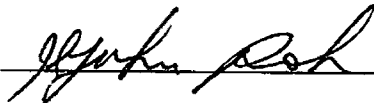
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Assignor has executed this Assignment as of the Effective Date of **March 21, 2012**.

Assignor: **Il Juhn Roh**

Signature: \_\_\_\_\_



Lumen Ref.: PRF-104/US

PID: 17300 IID: 4221

## ASSIGNMENT OF INVENTION AND PATENT

This Assignment of Invention and Patent (the "Assignment") is made and effective as of **March 21, 2012**, by and between **Jennifer E. Klare**, an individual residing in **Berkeley, CA, USA**, (the "Assignor") and **Porifera, Inc.**, an entity whose address is **3507 Breakwater Ave, Hayward, CA 94545, USA** (the "Assignee").

1) For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns and transfers to Assignee and the successors and assigns of Assignee, its entire right, title and interest in and to (i) the invention or inventions described in US patent application filed herewith, naming inventor(s) **Ravindra Revanur, Valentin Lulevich, Ijuhn Roh, Jennifer E. Klare, Sangil Kim, Aleksandr Noy, Olgica Bakajin**, entitled **Membranes having aligned 1-D nanoparticles in a matrix layer for improved fluid separation** (the "Application") naming Assignor as an inventor, (ii) any and all patent applications (whether provisional or non-provisional) relating to said invention(s), including all continuations, continuations-in-part, divisions, substitutes, reissues or renewals thereof, in any and all countries, (iii) any and all patents relating to such invention(s) in any and all countries that may be granted on any such application(s), including all reissues or extensions of any such patents and (iv) any and all domestic and foreign rights of priority resulting from the filing of the Application.

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Assignor has executed this Assignment as of the Effective Date of **March 21, 2012**.

Assignor: **Jennifer E. Klare**

Signature: \_\_\_\_\_



Lumen Ref.: PRF-104/US  
PID: 17300 IID: 4264

**ASSIGNMENT OF INVENTION AND PATENT**

This Assignment of Invention and Patent (the "Assignment") is made and effective as of **March 21, 2012**, by and between **Sangil Kim**, an individual residing in **Pleasanton, CA, USA**, (the "Assignor") and **Porifera, Inc.**, an entity whose address is **3507 Breakwater Ave, Hayward, CA 94545, USA** (the "Assignee").

1) For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns and transfers to Assignee and the successors and assigns of Assignee, its entire right, title and interest in and to (i) the invention or inventions described in US patent application filed **herewith**, naming inventor(s) **Ravindra Revanur, Valentin Lulevich, Il Juhn Roh, Jennifer E. Klare, Sangil Kim, Aleksandr Noy, Olgica Bakajin**, entitled **Membranes having aligned 1-D nanoparticles in a matrix layer for improved fluid separation** (the "Application") naming Assignor as an inventor, (ii) any and all patent applications (whether provisional or non-provisional) relating to said invention(s), including all continuations, continuations-in-part, divisions, substitutes, reissues or renewals thereof, in any and all countries, (iii) any and all patents relating to such invention(s) in any and all countries that may be granted on any such application(s), including all reissues or extensions of any such patents and (iv) any and all domestic and foreign rights of priority resulting from the filing of the Application.

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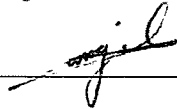
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Assignor has executed this Assignment as of the Effective Date of **March 21, 2012**.

Assignor: **Sangil Kim**

Signature: \_\_\_\_\_



Lumen Ref.: PRF-104/US  
PID: 17300 IID: 4222

## ASSIGNMENT OF INVENTION AND PATENT

This Assignment of Invention and Patent (the "Assignment") is made and effective as of **March 21, 2012**, by and between **Aleksandr Noy**, an individual residing in **San Carlos, CA, USA**, (the "Assignor") and **Porifera, Inc.**, an entity whose address is **3507 Breakwater Ave, Hayward, CA 94545, USA** (the "Assignee").

1) For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns and transfers to Assignee and the successors and assigns of Assignee, its entire right, title and interest in and to (i) the invention or inventions described in US patent application filed **herewith**, naming inventor(s) **Ravindra Revanur, Valentin Lulevich, Il Juhn Roh, Jennifer E. Klare, Sangil Kim, Aleksandr Noy, Olgica Bakajin**, entitled **Membranes having aligned 1-D nanoparticles in a matrix layer for improved fluid separation** (the "Application") naming Assignor as an inventor, (ii) any and all patent applications (whether provisional or non-provisional) relating to said invention(s), including all continuations, continuations-in-part, divisions, substitutes, reissues or renewals thereof, in any and all countries, (iii) any and all patents relating to such invention(s) in any and all countries that may be granted on any such application(s), including all reissues or extensions of any such patents and (iv) any and all domestic and foreign rights of priority resulting from the filing of the Application.

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Assignor has executed this Assignment as of the Effective Date of **March 21, 2012**.

Assignor: **Aleksandr Noy**

Signature: \_\_\_\_\_



Lumen Ref.: PRF-104/US  
PID: 17300 IID: 4065

## ASSIGNMENT OF INVENTION AND PATENT

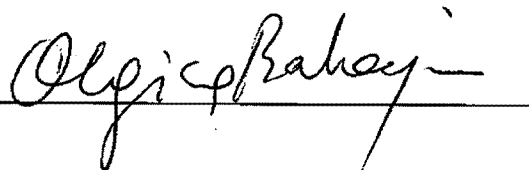
This Assignment of Invention and Patent (the "Assignment") is made and effective as of **March 21, 2012**, by and between **Olgica Bakajin**, an individual residing in **San Leandro, CA, USA**, (the "Assignor") and **Porifera, Inc.**, an entity whose address is **3507 Breakwater Ave, Hayward, CA 94545, USA** (the "Assignee").

- 1) For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Assignor hereby sells, assigns and transfers to Assignee and the successors and assigns of Assignee, its entire right, title and interest in and to (i) the invention or inventions described in US patent application filed herewith, naming inventor(s) **Ravindra Revanur, Valentin Lulevich, Iljuhn Roh, Jennifer E. Klare, Sangil Kim, Aleksandr Noy, Olgica Bakajin**, entitled **Membranes having aligned 1-D nanoparticles in a matrix layer for improved fluid separation** (the "Application") naming Assignor as an inventor, (ii) any and all patent applications (whether provisional or non-provisional) relating to said invention(s), including all continuations, continuations-in-part, divisions, substitutes, reissues or renewals thereof, in any and all countries, (iii) any and all patents relating to such invention(s) in any and all countries that may be granted on any such application(s), including all reissues or extensions of any such patents and (iv) any and all domestic and foreign rights of priority resulting from the filing of the Application.
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Assignor has executed this Assignment as of the Effective Date of **March 21, 2012**.

Assignor: **Olgica Bakajin**

Signature: \_\_\_\_\_



Lumen Ref.: PRF-104/US  
PID: 17300 IID: 4085