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| Atty Ref/Docket No.: 2413.080US1   | . Patent and Trademark Office   |  |
|--|---|--|
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| 1. Name of conveying party(ies):   | 2. Name and address of receiving party(ies):  |  |
| Pinar Akcora, Sanat K. Kumar   | Name: The Trustees of Columbia University in the City of New York   |  |
| Additional name(s) of conveying party(ies) attached?  [ ]Yes [X]No   | Street Address: 535 West 116th Street<br>412 Low Memorial Library   |  |
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| [X] Assignment [ ] Merger [ ] Security Agreement [ ] Change of Name [ ] Other  | Additional name(s) & address(es) attached? [ ]Yes [X]No   |  |
| Execution Date: June 6, 2010, June 15, 2010  |   |  |
| <ol> <li>Application number(s) or patent number(s):</li> <li>If this document is being filed together with a new application</li> </ol>  | n, the execution date of the application is:  |  |
| A. Patent Application No.(s)   | B. Patent No.(s)  |  |
| Serial No. 12/746,865, filed June 8, 2010  |   |  |
| Additional numbers attached? [ ]Yes [X]No  |   |  |
| 5. Name and address of party to whom correspondence concerning document should be mailed:  | <ul> <li>6. Total number of applications and patents involved: 1</li> <li>7. Total fee (37 CFR 3.41):\$ 40.00</li> </ul>  |  |
| Name: Geoffrey K. Cooper   | []Enclosed  |  |
| Address: Schwegman, Lundberg & Woessner, P.A.  | [X]Authorized to be charged to deposit account 19-0743  |  |
| P.O. Box 2938<br>Minneapolis, MN 55402-0938  | <ol> <li>Please charge any additional fees or credit any over<br/>payments to our Deposit Account No.: 19-0743</li> </ol> |  |
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| 9. Statement and signature. To the best of my knowledge and belief, the foregoing inform of the original document.  Geoffrey K. Cooper/Reg. No. 51,266  Name of Person Signing  Total  | nation is true and correct and any attached copy is a true copy    Land   |  |
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| And the second of the second o |   |  |

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Alexandria, VA 22313-1450

Attorney Docket No. 2413.080U\$1 Client Ref. No. JRM08-041/2413.080U\$1/JS

## ASSIGNMENT

WHEREAS, We, <u>Pinar Akcora</u>, residing at 415 W. 144th St. #7, New York, NY 10031, and <u>Sanat K. Kumar</u>, residing at 500 W. 120th Street Mudd 801, New York, NY 10027, made certain new and useful inventions and improvements which are described in an application for U.S. Letters Patent on <u>June 8, 2010</u>, which application was assigned U.S. patent application serial number <u>12/746.865</u>, and is entitled <u>ANISOTROPIC SELF-ASSEMBLY OF NANOPARTICLES IN COMPOSITES</u>;

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned do hereby:

SELL, ASSIGN AND TRANSFER to The Trustees of Columbia University in the City of New York (the "Assignee"), a corporation of the State of New York, having a place of business at 535 West 116th Street. 412 Low Memorial Library, New York. New York 10027, the entire right, title and interest for the United States and all foreign countries in and to: any and all inventions and improvements which are disclosed in the identified application for U.S. Letters Patent, and which may be further identified below; such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States (including all provisional and non-provisional applications), and in all foreign countries on any of such inventions and/or improvements (including any applications for utility models); all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such inventions and/or improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and to claim priority based on the identified application;

AUTHORIZE AND REQUEST that any attorney associated with U.S. PTO Customer No. <u>68836</u> may (directly or through his/her designee) delete, insert, or alter any information identifying this application, or any related application, below, after execution of this Assignment;

## Additional Application Information

- U.S. Provisional Application Serial No. 61/014,350, filed on December 17, 2007.
- U.S. Provisional Application Serial No. 61/019,516, filed on January 7, 2008.
- U.S. Provisional Application Serial No. 61/128,216, filed on May 20, 2008.

PCT Application Serial No. PCT/US2008/013769, filed on December 16, 2008.

ASSIGNMENT
Client Ref. No. 1RM08-041/2413.080US1/JS
Assignors: Pinar Akcora et al.
Title. ANISOTROPIC SELF-ASSEMBLY OF NANOPARTICLES IN COMPOSITES
Page 2 of 4

Docket No: 2413,080U\$1 Serial Number: 12/746,865

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such improvements to the Assignee;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and/or property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT, that when requested and without compensation, but at the expense of the Assignee, in order to carry out in good faith the intent and purpose of this Assignment, the undersigned will (1) execute all provisional, non-provisional, divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers; (3) communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; (4) cooperate with the Assignee in any interference, reexamination, reissue, opposition, dispute, or litigation involving any of the applications or patents for such improvements; and (5) take such further actions as the Assignee shall reasonably consider necessary or desirable for vesting title to such improvements in the Assignee, or for securing, maintaining and enforcing proper patent protection for such improvements;

THIS AGREEMENT IS TO BE BINDING on the heirs, assigns, representatives and successors of the undersigned, and is to extend to the benefit of the successors, assigns and nominees of the Assignee.

AGREED as of the date of my signature below:

**06/15/2010** 14:17 5738844940

MIZZOU CHE

PAGE 03

| STATE OF   | and this 15 day of   |
|--|--|
| STATE OF   | Akcora   |
|  |  |
| COUNTY OF  |  |
| On this day of, 20 before m<br>Pinar Akcora, to me known and known to me to be the person describe<br>foregoing instrument, and he/she duly acknowledged to me that he/she<br>uses and purposes therein set forth. | oc personally appeared and in and who executed the executed the same for the |
| SEAL]  |  |
| Notary Public  |  |

**RECORDED: 07/27/2010** 

| ASSIGNMENT Client Ref. No. 18M08-041/2413.08CUSI/IS Assignors: Pinar Aksors et al. Tille: ANISOTROPIC SELF-ASSEMBLY OF NANOPA Page 4 of 4 | Dacket No: 2413.080US1  Serial Number: 12/746,865  RTICLES IN COMPOSITES   |
|---|--|
| IN TESTIMONY WHEREOF  | , I have hereunto set my hand this day of  |
|   | Sanat K. Kumar   |
| STATE OF NO Year )  |  |
| COUNTY OF   |  |
| Sanat K. Kumar, to me known and known   | , 20 before me personally appeared to me to be the person described in and who executed acknowledged to me that he/she executed the same for |
| [SEAL]  | Notary Public  |