

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT		
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT		
<b>CONVEYING PARTY DATA</b>			
	<b>Name</b>	<b>Execution Date</b>	
	YUICHI KAWATO	03/06/2014	
	YUSUKE MAEDA	03/06/2014	
	TOMIO KUDO	03/06/2014	
<b>RECEIVING PARTY DATA</b>			
<b>Name:</b>	ISHIHARA CHEMICAL CO., LTD.		
<b>Street Address:</b>	5-26, NISHIYANAGIWARA-CHO, HYOGO-KU, KOBE-SHI,		
<b>City:</b>	HYOGO		
<b>State/Country:</b>	JAPAN		
<b>Name:</b>	APPLIED NANOTECH HOLDINGS, INC.		
<b>Street Address:</b>	3006 LONGHORN BLVD., SUITE 107		
<b>City:</b>	AUSTIN		
<b>State/Country:</b>	TEXAS		
<b>Postal Code:</b>	78758		
<b>PROPERTY NUMBERS Total: 1</b>			
	<b>Property Type</b>	<b>Number</b>	
	Application Number:	14346519	
<b>CORRESPONDENCE DATA</b>			
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<b>ATTORNEY DOCKET NUMBER:</b>	P45332		
<b>NAME OF SUBMITTER:</b>	DANIEL B. MOON		
<b>SIGNATURE:</b>	/Daniel B. Moon/		
<b>DATE SIGNED:</b>	03/21/2014		
<b>Total Attachments: 4</b>			

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**ASSIGNMENT**

WHEREAS, **Yuichi KAWATO**, a resident of Nishinomiya-shi, Hyogo, JAPAN, whose mailing address is c/o ISHIHARA CHEMICAL CO., LTD., 5-26, Nishiyanagiwara-cho, Hyogo-ku, Kobe-shi, Hyogo, JAPAN, **Yusuke MAEDA**, a resident of Kobe-shi, Hyogo, JAPAN, whose mailing address is c/o ISHIHARA CHEMICAL CO., LTD., 5-26, Nishiyanagiwara-cho, Hyogo-ku, Kobe-shi, Hyogo, JAPAN, and **Tomio KUDO**, a resident of Kobe-shi, Hyogo, JAPAN, whose mailing address is c/o ISHIHARA CHEMICAL CO., LTD., 5-26, Nishiyanagiwara-cho, Hyogo-ku, Kobe-shi, Hyogo, JAPAN, hereinafter referred to as the ASSIGNORS, have invented a certain improvement relating to

**COPPER PARTICULATE DISPERSION, CONDUCTIVE FILM FORMING  
METHOD AND CIRCUIT BOARD**

for which they have executed, on the same date as this assignment, an application for Letters Patent for the United States to be filed in the United States Patent and Trademark Office, which Application is a National Stage of International Application No. PCT/JP2012/050009, filed January 4, 2012.

If this Assignment is filed after the filing date of the above-identified application, the undersigned hereby authorize and request any one of the practitioners of record in this application associated with Customer No. 07055 including Neil F. Greenblum, Reg. No. 28,394, Bruce H. Bernstein, Reg. No. 29,027, Arnold Turk, Reg. No. 33,094, James L. Rowland, Reg. No. 32,674, Stephen M. Roylance, Reg. No. 31,296, Leslie J. Paperner, Reg. No. 33,329, William Pieprz, Reg. No. 33,630, Robert W. Mueller, Reg. No. 35,043, William E. Lyddane, Reg. No. 41,568 and William S. Boshnick, Reg. No. 44,550, of the firm Greenblum & Bernstein, P.L.C., whose address is 1950 Roland Clarke Place, Reston, Virginia 20191, to insert here in parenthesis (Application No. \_\_\_\_\_, filed \_\_\_\_\_) the filing date and application number of said application when known.

AND WHEREAS, **ISHIHARA CHEMICAL CO., LTD.**, a corporation organized and existing under the laws of JAPAN, whose mailing address is 5-26, Nishiyanagiwara-cho, Hyogo-ku, Kobe-shi, Hyogo, JAPAN, and **APPLIED NANOTECH HOLDINGS, INC.**, a corporation organized and existing under the laws of UNITED STATES, whose mailing address is 3006 Longhorn Blvd., Suite 107, Austin, Texas 78758, UNITED STATES, hereinafter known as the ASSIGNEES, are each desirous of acquiring an equal undivided interest in the entire right, title and interest for the United States in and to said invention and application, including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted thereon, including any and all renewals, reissues, reexaminations, and prolongations thereof.

NOW, THIS WITNESSETH that for good and valuable consideration, the receipt whereof is hereby acknowledged, said ASSIGNORS hereby assign, sell and transfer to said ASSIGNEES, their assigns and legal representatives, the entire and exclusive right, title and interest in and to said invention and application, for the United States including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted therefor and all rights to sue for past

and future infringement thereunder, said ASSIGNEES and their assigns and legal representatives to have, hold, exercise and enjoy the said invention and application, including any and all divisions and continuations thereof, and any and all Letters Patent which may be granted thereon, including any and all renewals, reissues, reexaminations, and prolongations thereof, with all the rights, powers, privileges, and advantages in any ways arising from or pertaining thereto, for and during the term or terms of any and all such Letters Patent when granted, including any and all renewals, reissues, reexaminations, and prolongations thereof, for the use and benefit of said ASSIGNEES and their assigns and legal representatives in as ample and beneficial a manner to all intents and purposes as the said ASSIGNORS might or could have held and enjoyed the same, if this assignment had not been made.

AND said ASSIGNORS hereby agree to execute all papers necessary to file applications in the United States for said invention and to assign the same to said ASSIGNEES, or any assignee acquiring title to said invention, and to execute any other papers that may be needed in connection with filing said application and securing Letters Patent thereon.

AND said ASSIGNORS authorize and request the Commissioner of Patents to issue Letters Patent on said application, and on any and all divisions and continuations thereof, to said ASSIGNEES, their assigns and legal representatives, in accordance herewith.

IN TESTIMONY WHEREOF, this assignment is executed by said ASSIGNOR(S), on the respective date(s) indicated below.

First Witness:

Hidetoshi Arimura  
(Name)

March 6, 2014  
(Date)

Yuichi Kawato  
**Yuichi KAWATO**

March 6, 2014  
Date

Second Witness:

Kazushige Miyamoto  
(Name)

March 6, 2014  
(Date)

First Witness:

Hidetoshi Arimura  
(Name)

March 6, 2014  
(Date)

Yusuke Maeda  
**Yusuke MAEDA**  
March 6 2014  
Date

Second Witness:

Kazushige Miyamoto  
(Name)

March 6, 2014  
(Date)

First Witness:

Hidetoshi Arimura  
(Name)

March 6, 2014  
(Date)

Tomio Kudo  
Tomio KUDO  
March 6, 2014  
Date

Second Witness:

Kazushige Miyamoto  
(Name)

March 6 . 2014  
(Date)