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

### 1. Name of conveying party(ies)

Torsten HEGMANN

Hao Qi

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

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

Execution Date(s) May 2, 2008

- ☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Joint Research Agreement  
☐ Government Interest Assignment  
☐ Executive Order 9424, Confirmatory License  
☐ Other \_\_\_\_\_

### 2. Name and address of receiving party(ies)

Name: University of Manitoba

Internal Address: \_\_\_\_\_

Street Address: Room 202, Administration Building,

University of Manitoba

City: Winnipeg

State: Manitoba

Country: Canada Zip: R3T 2N2

Additional name(s) & address(es) attached? ☐ Yes ☒ No

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

☐ This document is being filed together with a new application.

A. Patent Application No.(s)

B. Patent No.(s)

12/597,235

Additional numbers attached? ☐ Yes ☒ No

### 5. Name and address to whom correspondence concerning document should be mailed:

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

### 7. Total fee (37 CFR 1.21(h) & 3.41) \$40.00

- ☒ Authorized to be charged to deposit account  
☐ Enclosed  
☐ None required (government interest not affecting title)

### 8. Payment Information

Deposit Account Number 134895

Authorized User Name Ann M. Mueeting

### 9. Signature:

Ann M. Mueeting  
Signature

Oct. 23, 2009  
Date

Ann M. Mueeting (Reg No. 33,977)

Name of Person Signing

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

3

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Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1460, Alexandria, V.A. 22313-1460

**PATENT**

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REEL: 023418 FRAME: 0743

CH \$40.00 134895 12597235

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**ASSIGNMENT**

WHEREAS, we, TORSTEN HEGMANN and HAO QI, citizens of respectively, Germany and China, residing at, respectively, 59 Uppingham Place, Winnipeg, Manitoba R2N 4N5, Canada and 3-88 Killarney Avenue, Winnipeg, Manitoba R3T 3R2, Canada, (hereinafter referred to as the "Assignors"), have made certain inventions and discoveries concerning PLANAR NEMATIC LIQUID CRYSTAL CELLS DOPED WITH NANOPARTICLES AND METHODS OF INDUCING A FREEDERICKSZ TRANSITION as disclosed in U.S. Patent Application Serial Nos. 60/927,417 and 60/997,962 and 61/008,040, filed on, respectively, May 3, 2007 and October 4, 2007 and December 18, 2007, and as disclosed in a PCT International patent application to be filed claiming priority therefrom (hereinafter collectively referred to as the "Applications");

AND WHEREAS, UNIVERSITY OF MANITOBA, whose full post office address is Room 202, Administration Building, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada, (hereinafter referred to as the "Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions and discoveries, and in and to the Applications inclusive of any and all priority rights derived therefrom for any and all countries in the world, and in and to any and all Letters Patent issuing in any and all countries in the world, to be granted for said inventions and discoveries based on said Applications or on patent applications filed in any country claiming priority from said Applications;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00), and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, we the Assignors, do hereby sell, assign, transfer, and set over unto the Assignee, its successors and assigns, our entire right, title, and interest in and to the inventions and discoveries disclosed in the Applications, and in and to the Applications and any continuations or divisions thereof and all priority rights derived therefrom, and in and to any and all patent applications and any continuations or divisions thereof filed in any country claiming priority from the Applications, and in and to all Letters Patent which may be granted upon the Applications or upon patent applications filed in any and all countries in the world including the United States of America, claiming priority from the Applications, and in and to any and all reissues, substitutions, or prolongations thereof; the same to be held and enjoyed by the Assignee for its own use and behoof, and for the use and behoof of its successors and assigns, to the full end of the term or terms for which said Letters Patent, or reissues, substitutions, or prolongations thereof may be granted, as fully and entirely as the same would have been held and enjoyed by us had this assignment and sale not been made;

AND we hereby agree that, upon request, and without further consideration, but at the expense of the Assignee, we will communicate to the Assignee or its representatives or nominees any

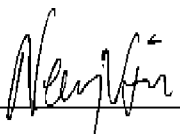
**PATENT****REEL: 023418 FRAME: 0744**

facts known to us respecting said inventions and discoveries and testify in any legal proceedings, sign all lawful papers, execute all divisional, continuing, and reissue applications, make all rightful oaths and generally aid the Assignee, its successors, assigns, and nominees to obtain and enforce proper patent protection for said inventions and discoveries in all countries, and we further agree to execute any and all further papers which may be necessary or desirable to vest or perfect the title of the Assignee, its successors and assigns, in and to said inventions and discoveries, and in and to any and all Letters Patent or reissues thereof which may be granted upon application in any and all countries in the world.

AND we hereby authorize and request any official whose duty it is to issue patents to issue each and every Letters Patent to be granted upon the aforesaid Applications in any and all countries, and each and every reissue of said Letters Patent, to the Assignee, its successors and assigns, as the assignee of our entire right, title and interest therein, in accordance with this assignment.

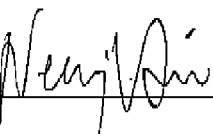
THIS assignment made effective as of May 2, 2008.

SIGNED this 2 day of May, 2008.

  
WITNESS

  
TORSTEN HEGMANN

SIGNED this 2 day of May, 2008.

  
WITNESS

  
HAO QI