

PATENTS ONLY

PATENTS ONLY

**TO THE COMMISSIONER FOR PATENTS**

Our Case No.: 12264/056

Please record the attached original document or copy thereof.

## 1. Name of Party(ies) conveying an interest:

Ernest R. Blatchley, III  
 Chengyue Shen  
 Zorana Naunovic  
 Lian-Shin Lin  
 Dennis A. Lyn  
 Donald E. Bergstrom  
 Shiyue Fang  
 Yousheng Guan  
 Joseph Paul Robinson  
 Kathym Ragheb  
 Gérald Grégori

Additional name(s) of conveying party(ies) attached?

☐ Yes ☒ No

## 2. Name and Address of Party(ies) receiving an interest:

Name: Purdue Research Foundation  
 Internal Address:  
 Street Address: 3000 Kent Avenue  
 City: West Lafayette  
 State/Zip: IN 47906

Additional name(s) and addresses attached?

☐ Yes ☒ No

## 3. Description of the interest conveyed:

☒ Assignment ☐ Change of Name Other:☐ Security Agreement ☐ Merger

Execution Date: Blatchley, III-08/01/2005; Shen-08/15/2005; Naunovic-06/23/2005; Lin-08/19/2005; Lyn-09/21/2005; Bergstrom-08/01/2005; Fang-06/16/2005; Guan-06/17/2005; Robinson-08/10/2005; Ragheb-08/10/2005; Grégori-08/10/2005.

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

If this document is being filed together with a new application, the execution date of the application is:

Date

A. Patent Application No.(s)

B. Patent No.(s)

11/090,312

Filed: March 26, 2005

Additional numbers attached? ☐ Yes ☒ No

## 5. Name and address of party to whom correspondence concerning document should be sent to by return FAX:

Nicholas M. Boivin, Esq.  
 BRINKS HOFER GILSON & LIONE  
 One Indiana Square, Suite 1600  
 Indianapolis, IN 46204  
 Tel. (317)636-0886  
 FAX (317)634-6701

## 6. Number of applications and patents involved: 1

## 7. Total fee (37 CFR 3.41)

\$40.00

☐ Enclosed☒ Authorized to be charged to Deposit Account No. 23-19258. ☒ Please charge any deficiencies in fee or credit any overpayment to Deposit Account No. 23-1925.**DO NOT USE THIS SPACE**

## 9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Nicholas M. Boivin

Name of Person Signing

*Nicholas M. Boivin*  
 Signature

10/10/05  
 Date

Total number of pages including cover sheet, attachments, and document: 21

700216616

**PATENT**  
**REEL: 016866 FRAME: 0368**

CH \$40.00 231925 11090312

Case No. 12264-56**ASSIGNMENT**

WHEREAS, Ernest R. Blatchley III, Chengyue Shen, Zorana Naunovic, Lian-Shin Lin, Dennis A. Lyn, Donald E. Bergstrom, Shiyue Fang, Yousheng Guan, Joseph Paul Robinson, Kathyrn Ragheb, and Gérald Grégori hereinafter called the "Assignors", have made the invention described in the United States patent application entitled DYED MICROSPHERES FOR CHARACTERIZATION OF PHOTOCHEMICAL REACTOR BEHAVIOR, executed by Assignors on the same date as this Assignment;

WHEREAS, Purdue Research Foundation, a not-for-profit corporation of the State of Indiana, having a place of business at 3000 Kent Avenue, West Lafayette, Indiana 47906, hereinafter called the "Assignee", desires to acquire the entire right, title and interest in and to the invention and the patent application identified above, and all patents which may be obtained for said invention, as set forth below;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00), and other valuable and legally sufficient consideration, the receipt of which by the Assignors from the Assignee is hereby acknowledged, the Assignors have sold, assigned and transferred, and by these presents do sell, assign and transfer to the Assignee, the entire right, title and interest for the United States in and to the invention and the patent application identified above, and any patents that may issue for said invention in the United States; together with the entire right, title and interest in and to said invention and all patent applications and patents therefor in all countries foreign to the United States, including the full right to claim for any such application all benefits and priority rights under any applicable convention; together with the entire right, title and interest in and to all continuations, divisions, renewals and extensions of any of the patent applications and patents defined above; to have and to hold for the sole and exclusive use and benefit of the Assignee, its successors and assigns, to the full end of the term or terms for all such patents.

The Assignors hereby covenant and agree, for both the Assignors and the Assignors' legal representatives, that the Assignors will assist the Assignee in the prosecution of the patent application identified above; in the making and prosecution of any other patent applications that the Assignee may elect to make covering the invention identified above; in

vesting in the Assignee like exclusive title in and to all such other patent applications and patents; and in the prosecution of any interference which may arise involving said invention, or any such patent application or patent; and that the Assignors will execute and deliver to the Assignee any and all additional papers which may be requested by the Assignee to carry out the terms of this Assignment.

The Commissioner of Patents and Trademarks is hereby authorized and requested to issue patents to the Assignee in accordance with the terms of this Assignment.

IN TESTIMONY WHEREOF, the Assignors have executed this agreement.

DATED:

8/1/05

Ernest R. Blatchley III

Ernest R. Blatchley III

DATED:

Chengyue Shen

DATED:

Zorana Naunovic

DATED:

Lian-Shin Lin

DATED:

Dennis A. Lyn

DATED:

Donald E. Bergstrom

DATED:

Shiyue Fang

DATED:

Yousheng Guan

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DATED:	_____	_____ Ernest R. Blatchley III
DATED:	08/15/2005	_____ Chengyue Shen
DATED:	_____	_____ Zorana Naunovic
DATED:	_____	_____ Lian-Shin Lin
DATED:	_____	_____ Dennis A. Lyn
DATED:	_____	_____ Donald E. Bergstrom
DATED:	_____	_____ Shiyue Fang
DATED:	_____	_____ Yousheng Guan

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IN TESTIMONY WHEREOF, the Assignors have executed this agreement.

DATED:	_____	_____ Ernest R. Blatchley III
DATED:	_____	_____ Chengyue Shen
DATED:	<u>6/23/2005</u>	<u>Z Naunovic</u> Zorana Naunovic
DATED:	_____	_____ Lian-Shin Lin
DATED:	_____	_____ Dennis A. Lyn
DATED:	_____	_____ Donald E. Bergstrom
DATED:	_____	_____ Shiyue Fang
DATED:	_____	_____ Yousheng Guan

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DATED:

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DATED:

Chengyue Shen

DATED:

Zorana Naunovic

DATED:

8/19/05

  
Lian-Shin Lin

DATED:

Dennis A. Lyn

DATED:

Donald E. Bergstrom

DATED:

Shiyue Fang

DATED:

Yousheng Guan

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DATED:

Ernest R. Blatchley III

DATED:

Chengyue Shen

DATED:

Zorana Naunovic

DATED:

Lian-Shin Lin

DATED:

21 Sept 2015

Dennis A. Lyn

DATED:

Donald E. Bergstrom

DATED:

Shiyue Fang

DATED:

Yousheng Guan

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DATED: \_\_\_\_\_

\_\_\_\_\_  
Ernest R. Blatchley III

DATED: \_\_\_\_\_

\_\_\_\_\_  
Chengyue Shen

DATED: \_\_\_\_\_

\_\_\_\_\_  
Zorana Naunovic

DATED: \_\_\_\_\_

\_\_\_\_\_  
Lian-Shin Lin

DATED: \_\_\_\_\_

\_\_\_\_\_  
Dennis A. Lyn

DATED: Aug. 1, 2005

Donald E. Bergstrom  
Donald E. Bergstrom

DATED: \_\_\_\_\_

\_\_\_\_\_  
Shiyue Fang

DATED: \_\_\_\_\_


\_\_\_\_\_  
Yousheng Guan



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DATED:	_____	_____ Chengyue Shen
DATED:	_____	_____ Zorana Naunovic
DATED:	_____	_____ Lian-Shin Lin
DATED:	_____	_____ Dennis A. Lyn
DATED:	_____	_____ Donald E. Bergstrom
DATED:	<u>06/16/05</u>	<u></u> Shiyue Fang
DATED:	_____	_____ Yousheng Guan

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DATED:

Chengyue Shen

DATED:

Zorana Naunovic

DATED:

Lian-Shin Lin

DATED:

Dennis A. Lyn

DATED:

Donald E. Bergstrom

DATED:

Shiyue Fang

DATED:


6-17-2005

Yousheng Guan


DATED:

8/10/05  
Joseph Paul Robinson

DATED:

8/10/05  
Kathym Ragheb

DATED:

8/10/05  
Gérald Grégori

State of Indiana  
Tippecanoe County

Carlene R Linn  
Carlene R Linn, Notary Public  
Comm. Exp. 2/14/2008

STATE OF Indiana )  
 ) ss.  
 COUNTY OF Tippecanoe )

I, Karen Sue Hatke, a Notary Public in and for the County and State aforesaid, do hereby certify that Ernest R. Blatchley III, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this 1st day of August, 2005.

Karen Sue Hatke  
 Notary Public

My Commission Expires: January 12, 2008

STATE OF )  
 ) ss.  
 COUNTY OF )

I, \_\_\_\_\_, a Notary Public in and for the County and State aforesaid, do hereby certify that Chengyue Shen, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
 Notary Public

My Commission Expires: \_\_\_\_\_

STATE OF )  
 ) ss.  
 COUNTY OF )

I, \_\_\_\_\_, a Notary Public in and for the County and State aforesaid, do hereby certify that Ernest R. Blatchley III, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
 Notary Public

My Commission Expires: \_\_\_\_\_

STATE OF Indiana )  
 ) ss.  
 COUNTY OF Tippecanoe

I, Olivia M Richardson a Notary Public in and for the County and State aforesaid, do hereby certify that Chengyue Shen, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this 15th day of August, 2005.

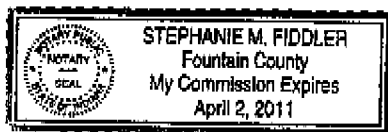
Olivia M Richardson  
 Notary Public  
Resident of Boone

My Commission Expires: 5/2/07

STATE OF Indiana )  
COUNTY OF Fountain ) ss.

I, Stephanie M. Fiddler a Notary Public in and for the County and State aforesaid, do hereby certify that Zorana Naunovic, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

23<sup>rd</sup> day of June, 2005.



Stephanie M. Fiddler  
Notary Public

My Commission Expires: April 2, 2011

STATE OF )  
) ss.  
COUNTY OF )

I, \_\_\_\_\_, a Notary Public in and for the County and State aforesaid, do hereby certify that Lian-Shin Lin, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

STATE OF )  
 ) ss.  
 COUNTY OF )

I, \_\_\_\_\_, a Notary Public in and for the County and State aforesaid, do hereby certify that Zorana Naunovic, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
 Notary Public

My Commission Expires: \_\_\_\_\_

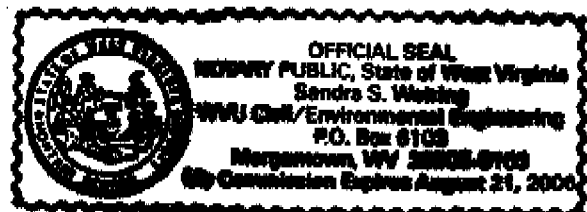
STATE OF West Virginia )  
 ) ss.  
 COUNTY OF Monongalia )

I, Sandra S. Wotring, a Notary Public in and for the County and State aforesaid, do hereby certify that Lian-Shin Lin, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this 19 day of August, 2005.

Sandra S. Wotring  
 Notary Public

My Commission Expires: August 21, 2006



STATE OF IndianaCOUNTY OF Tippecanoe ss.

I, Olivia M Richardson Notary Public in and for the County and State aforesaid, do hereby certify that Dennis A. Lyn, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this 21st day of September, 2005.

Olivia M Richardson  
Notary Public  
Resident of Boone County

My Commission Expires: 5/2/07

STATE OF )  
 ) ss.  
COUNTY OF )

I, \_\_\_\_\_, a Notary Public in and for the County and State aforesaid, do hereby certify that Donald E. Bergstrom, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_



STATE OF )  
 ) ss.  
 COUNTY OF )

I, \_\_\_\_\_, a Notary Public in and for the County and State aforesaid, do hereby certify that Dennis A. Lyn, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
 Notary Public

My Commission Expires: \_\_\_\_\_

STATE OF Indiana )  
 ) ss.  
 COUNTY OF Tippecanoe )

I, Deborah K Risher, a Notary Public in and for the County and State aforesaid, do hereby certify that Donald E. Bergstrom, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this 1 day of August, 2005.

Deborah K Risher  
 Notary Public

My Commission Expires: 11-2-07

STATE OF )  
 ) ss.  
 COUNTY OF )

I, \_\_\_\_\_, a Notary Public in and for the County and State aforesaid, do hereby certify that Shiyue Fang, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
 Notary Public

My Commission Expires: \_\_\_\_\_

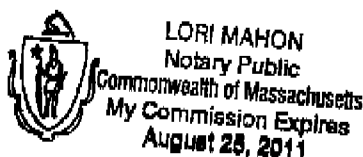
STATE OF Massachusetts  
 ) ss.  
 COUNTY OF Middlesex )

I, Lori Mahon, a Notary Public in and for the County and State aforesaid, do hereby certify that Yousheng Guan, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this 17 day of June, 2005.

Lori Mahon  
 Notary Public

My Commission Expires: August 25, 2011



STATE OF Michigan )  
 ) ss.  
 COUNTY OF Houghton )

I, Denise J. Laux, a Notary Public in and for the County and State aforesaid, do hereby certify that Shiyue Fang, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

8th IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this day of August, 2005.

Denise J. Laux  
 Notary Public

My Commission Expires: Jan. 20, 2007

STATE OF )  
 ) ss.  
 COUNTY OF )

I, \_\_\_\_\_, a Notary Public in and for the County and State aforesaid, do hereby certify that Yousheng Guan, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
 Notary Public

My Commission Expires: \_\_\_\_\_

STATE OF Indiana )  
COUNTY OF Tippicanoe ) ss.

I, Carlene R. Linn, a Notary Public in and for the County and State aforesaid, do hereby certify that Joseph Paul Robinson, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this 10<sup>th</sup> day of August, 2005.

Carlene R. Linn  
Notary Public

My Commission Expires: 2/14/2008

STATE OF Indiana )  
COUNTY OF Tippicanoe ) ss.

I, Carlene R. Linn, a Notary Public in and for the County and State aforesaid, do hereby certify that Kathryn Ragheb, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this 10<sup>th</sup> day of August, 2005.

Carlene R. Linn  
Notary Public

My Commission Expires: 2/14/2008

STATE OF Indiana )

) ss.  
COUNTY OF Tippecanoe)

I, Carlene A. Linn, a Notary Public in and for the County and State aforesaid, do hereby certify that Gérald Grégori, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that (s)he signed, sealed and delivered the said instrument as his/her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this  
10<sup>th</sup> day of August, 2005.

Carlene A. Linn  
Notary Public

My Commission Expires: 2/14/2008