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09/20/2011 U.S. DEPARTMENT OF COMMERCE United States Patent and Trademark Office 0027 (exp. 03/31/200 HEET 103633031 To the Director of the U.S. Patent and Trademark Onice. Flease 1000, and documents or the new address(es) below 1. Name of conveying party(ies) 2. Name and address of receiving party(ies) Name: Ecole Polytechnique Federale de Lausanne (EPFL) Shaik Mohammad Zakeeruddin executed April 6, 2010 Peter Pechy executed April 16, 2010 Internal Address: Michael Graetzel executed April 6, 2010 Additional name(s) of conveying party(ies) attached? Yes X No 3. Nature of conveyance/Execution Date(s): Street Address: EPFL-SRI, Station 10 Execution Date(s) See above Merger X Assignment City: CH-1015 Lausanne Security Agreement Change of Name Joint Research Agreement Government Interest Assignment Country: Switzerland Executive Order 9424, Confirmatory License ★ Other Swiss Corporation Additional name(s) & address(es) attached? Yes X No This document is being filed together with a new application. 4. Application or patent number(s): B. Patent No.(s) A. Patent Application No.(s) Additional numbers attached? Yes 6. Total number of applications and patents 5. Name and address to whom correspondence involved: 1 concerning document should be mailed: Name: Clifford W. Browning of Krieg DeVault LLP 7. Total fee (37 CFR 1.21(h) & 3.41) \$_40.00 Internal Address:____ Authorized to be charged to deposit account X Enclosed Street Address: One Indiana Square, Suite 2800 None required (government interest not affecting title) 8. Payment Information City: Indianapolis Zip: 46204 State: IN Phone Number: (317) 238-6203 Deposit Account Number Fax Number: (317) 636-1507 Authorized User Name Email Address: ipdocketing@kdlegal.com 9. Signature: September 16, 2011

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to: Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

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Clifford W. Browning

Name of Person Signing

PATENT REEL: 027062 FRAME: 0824

Total number of pages including cover

sheet, attachments, and documents:

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ASSIGNMENT (PATENT)

13/138665

WHEREAS, Shaik Mohammad ZAKEERUDDIN, Rue de l'Industrie 57, CH-1030 Bussigny-Lausanne, Switzerland hereinafter referred to as Assignor, has made a new and useful invention in

MODIFIED SURFACE

which is found in International Patent Application No. PCT/IB2010/051211, filed on March 19, 2010 and for which Assignor will make application for Letters Patent of the United States; and

WHEREAS, Ecole Polytechnique Fédérale de Lausanne (EPFL), with address at EPFL-SRI, Station 10, CH-1015 Lausanne, Switzerland, hereinafter referred to as Assignee, desires to acquire 100% of the right, title, and interest in, to and under said invention disclosed, described and claimed or intended so to be in said application, and in, to and under said application, and in, to and under any and all Letters Patent, United States and foreign, which may be obtained thereof and thereon;

NOW, THEREFORE, to all and whom it may concern, be it known that for and in consideration of the sum of One Dollar (\$1.00) and other good, valuable and sufficient considerations to Assignor in hand paid, the receipt of which is hereby acknowledged, Assignor has sold, assigned and transferred, and by these presents does sell, assign and transfer unto Assignee, 100% of the right, title, and interest in, to and under said invention disclosed, described and claimed or intended so to be in said application, and any and all other applications thereon and arising therefrom, including any and all divisions and continuations thereof, and any and all divisions and continuations thereof, and any and all patents to be issued and obtained therefor and thereon, United States and foreign, including all reissues and extensions thereof.

Assignor hereby authorizes and requests the firm of Krieg DeVault LLP, One Indiana Square,
Suite 2800, Indianapolis, IN 46204-2079, to insert here in parentheses (Serial No.
Filed 20) the date and serial number of said application for Letters Patent of the
United States when officially known, and Assignor hereby authorizes and requests the Honorable
Commissioner of Patents to issue said Letters Patent to Assignee, its assigns and legal representatives

Assignor agrees to sign and execute any and all other papers necessary and desirable for the procurement of Letters Patent on said invention in this and all foreign countries for the use of Assignee.

WITNESS Assignor's hands this 6 h day of _______, 2010.

Shaik Mohammad ZAKEERUDDIN

S.M.Zudly

PATENT REEL: 027062 FRAME: 0825

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ASSIGNMENT (PATENT)

WHEREAS, Péter PÉCHY, Avenue de Chailly 63, CH-1012 Lausanne, Switzerland hereinafter referred to as Assignor, has made a new and useful invention in

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which is found in International Patent Application No. PCT/IB2010/051211, filed on March 19, 2010 and for which Assignor will make application for Letters Patent of the United States; and

WHEREAS, Ecole Polytechnique Fédérale de Lausanne (EPFL), with address at EPFL-SRI, Station 10, CH-1015 Lausanne, Switzerland, hereinafter referred to as Assignee, desires to acquire 100% of the right, title, and interest in, to and under said invention disclosed, described and claimed or intended so to be in said application, and in, to and under said application, and in, to and under any and all Letters Patent, United States and foreign, which may be obtained thereof and thereon;

NOW, THEREFORE, to all and whom it may concern, be it known that for and in consideration of the sum of One Dollar (\$1.00) and other good, valuable and sufficient considerations to Assignor in hand paid, the receipt of which is hereby acknowledged, Assignor has sold, assigned and transferred, and by these presents does sell, assign and transfer unto Assignee, 100% of the right, title, and interest in, to and under said invention disclosed, described and claimed or intended so to be in said application, and any and all other applications thereon and arising therefrom, including any and all divisions and continuations thereof, and any and all divisions and continuations thereof, and any and all patents to be issued and obtained therefor and thereon, United States and foreign, including all reissues and extensions thereof.

Assignor hereby authorizes and requests the firm of Krieg DeVault LLP, One Indiana Square,
Suite 2800, Indianapolis, IN 46204-2079, to insert here in parentheses (Serial No.
Filed 20) the date and serial number of said application for Letters Patent of the
United States when officially known, and Assignor hereby authorizes and requests the Honorable
Commissioner of Patents to issue said Letters Patent to Assignee, its assigns and legal representatives

Assignor agrees to sign and execute any and all other papers necessary and desirable for the procurement of Letters Patent on said invention in this and all foreign countries for the use of Assignee.

WITNESS Assignor's hands this 6 day of april, 2010.

Péter PÉCHY

PATENT REEL: 027062 FRAME: 0826

ASSIGNMENT (PATENT)

WHEREAS, Michael GRAETZEL, Chemin de Marquisat 7a, CH-1025 St-Sulpice, Switzerland hereinafter referred to as Assignor, has made a new and useful invention in

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which is found in International Patent Application No. PCT/IB2010/051211, filed on March 19, 2010 and for which Assignor will make application for Letters Patent of the United States; and

WHEREAS, Ecole Polytechnique Fédérale de Lausanne (EPFL), with address at EPFL-SRI, Station 10, CH-1015 Lausanne, Switzerland, hereinafter referred to as Assignee, desires to acquire 100% of the right, title, and interest in, to and under said invention disclosed, described and claimed or intended so to be in said application, and in, to and under said application, and in, to and under any and all Letters Patent, United States and foreign, which may be obtained thereof and thereon;

NOW, THEREFORE, to all and whom it may concern, be it known that for and in consideration of the sum of One Dollar (\$1.00) and other good, valuable and sufficient considerations to Assignor in hand paid, the receipt of which is hereby acknowledged, Assignor has sold, assigned and transferred, and by these presents does sell, assign and transfer unto Assignee, 100% of the right, title, and interest in, to and under said invention disclosed, described and claimed or intended so to be in said application, and any and all other applications thereon and arising therefrom, including any and all divisions and continuations thereof, and any and all divisions and continuations thereof, and any and all patents to be issued and obtained therefor and thereon, United States and foreign, including all reissues and extensions thereof.

Assignor hereby authorizes and requests the firm of Krieg DeVault LLP, One Indiana Square,
Suite 2800, Indianapolis, IN 46204-2079, to insert here in parentheses (Serial No.
Filed 20) the date and serial number of said application for Letters Patent of the
United States when officially known, and Assignor hereby authorizes and requests the Honorable
Commissioner of Patents to issue said Letters Patent to Assignee, its assigns and legal representatives.

Assignor agrees to sign and execute any and all other papers necessary and desirable for the procurement of Letters Patent on said invention in this and all foreign countries for the use of Assignee.

WITNESS Assignor's hands this 6 h day of _______, 2010.

Michael GRAETZEL

Andrey Leve

PATENT REEL: 027062 FRAME: 0827

RECORDED: 09/16/2011