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SIR:

Please record the attached original document(s) or copy(ies) therepin ance section \mathbb{R}^{10}

1. NAME OF CONVEYING PARTY(IES)

HONORABLE COMMISSIONER OF

PATENTS AND TRADEMARKS

Alexandria, VA 22313-1450

Chiping Chen, Michael A. Shapiro, Evgenya I. Smirnova, Richard J. Temkin & Jagadishwar R. Sigiri

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

2. NAME(S) AND ADDRESS(ES) OF RECEIVING PARTY(IES)

Massachusetts Institute of Technology 77 Massachusetts Avenue Cambridge, MA 02139

Additional name(s) of receiving party(ies) attached? No

3	NATURE	OF CON	JVFVA	NCF

_X	Assignment
	Security Agreement
	Merger
	Change of Name
	Other

Execution Date: 7/24/06 & 07/25/06

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:

A. Patent Application No(s): 10/171,725

B. Patent No(s):

Additional numbers attached? No

5. NAME AND ADDRESS OF PARTY TO WHOM CORRESPONDENCE CONCERNING DOCUMENT SHOULD BE DIRECTED:

Matthew E. Connors Gauthier & Connors LLP 225 Franklin Street Boston, Massachusetts 02110 (617) 426-9180, Extension 112 6. TOTAL NUMBER OF APPLICATIONS AND PATENTS INVOLVED:

7. TOTAL FEE DUE: \$40.00 (Enclosed)

If any additional fee(s) are due, the Commissioner is hereby authorized to charge the Deposit Order Account noted in item 8.

8. DEPOSIT ACCOUNT NUMBER: 19-0079

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.

Matthew E. Connors Name of Person Signing

Total number of pages including cover sheet, attachments, and document: $\underline{5}$

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the Mail Stop Assignment Recordation Services, Director of the U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450

08/09/2006 DBYRNE

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PATENT REEL: 018161 FRAME: 0018

ASSIGNMENT

Know all men by these presents that:

WHEREAS we, Chiping Chen

23 Doane Avenue

Needham, MA 02492

and

Michael A. Shapiro 12 Montview Circle Waltham, MA 02451

and

Evgenya I. Smirnova

11 Silvey Place

Somerville, MA 02143

and

Richard J. Temkin 31 Mayflower Road Needham, MA 02492

and

Jagadishwar R. Sirigiri

136 Pine Street Natick, MA 01760

have made an invention for

PHOTONIC BAND GAP STRUCTURE SIMULATOR

described in the application filed with the United States Patent and Trademark Office on June 14, 2002, as Serial No. 10/171,725, which claims priority under 35 U.S.C. §119(e) from United States provisional Patent Application Serial No. 60/298,434, filed on June 15, 2001, and

WHEREAS Massachusetts Institute of Technology, a corporation duly organized and existing under the laws of Massachusetts and having a place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139, for the benefit of itself, its successors and assigns, all inclusively hereinafter referred to as the Assignee, is desirous of acquiring the entire right, title and interest in and to the said invention, the said application, all inventions disclosed in said application and any and all Letters Patent of the United States and of all other countries which may be granted for the said invention or inventions, or any of them;

NOW, THEREFORE, for good and valuable consideration provided by said Assignee, the receipt whereof is hereby acknowledged, we do hereby sell, assign and transfer to the said Assignee the entire right, title and interest in and to the said invention, inventions and application, including

- 1 -

the entire right, title and interest in and to the said invention, inventions and application, including all priority rights arising therefrom, all inventions disclosed in said application, and any and all Letters Patent of the United States, and of all other countries, together with the right to apply for such Letters Patent, which may be granted for the said invention, inventions or any of them,

TO HAVE, HOLD AND ENJOY the said invention, the said application, and the said Letters Patent, to said

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

its successors and assigns, to its and their own use and behoof to the full end of the term or terms for which the said Letters Patent 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 authorize and request the Commissioner of Patents of the United States and the appropriate officers of all foreign patent offices to issue any and all Letters Patent which may be granted on the said application or applications above referred to, or for the said invention, or any of them, to the said Assignee in accordance with the terms of this instrument.

AND we hereby agree to execute and sign without further consideration any other legal document and any other assignments and any divisional, continuing, renewal, reissue or other application in and for all patents that may be appropriate and may be deemed necessary by the Assignee fully to secure to said Assignee its interests as aforesaid in and to the said invention or any part thereof and in and to the said patents or any of them.

AND we further covenant and agree that we will at any time upon request communicate to the said Assignee, its successors, assigns or other legal representatives, any facts known to us relating to the said invention and any patent that may be granted thereon, and will testify as to the same in any interference or litigation when requested to do so.

AND we hereby covenant for ourselves and our legal representatives that we have not hitherto assigned or granted any license to make, use or sell said invention, and that we will not henceforth purport to assign, license or execute any instrument to that effect in conflict with this assignment.

7/24/06

7/24/06

Date Michael A.

Chiping Chen
Chiping Chen
Chiping Chen

Michael A Shapiro

p.2 2004/004

Date	Michael A. Shapiro
07125/06 Date	Evgenya I. Smirnova
Date	Richard J. Temkin
Date	Jagadishwar R. Sirigiri

Date	Evgenya I. Smirnova
July 24, 2006 Date	Richard J. Temkin
July 24, 2006 Date	Jagadishwar Sirigiri

- 3 -

RECORDED: 08/09/2006