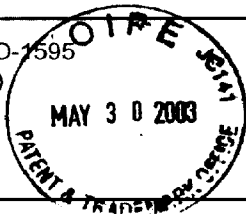


06-04-2003

FORM PTO-1595
(Rev. 6/93)



F

102463609
PATENTS ONLY

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

HEET

Attorney's Docket No. 030681-270

5-30-03

To the Director of the United States Patent and Trademark Office. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Shang-hyeun PARK, Ji-hye GWAK, Yong-wan JIN,
V.A. VOROBYOV, E.G. MOROZOV

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

3. Nature of conveyance:

Assignment Merger
 Security Agreement Change of Name

Other: _____

Execution Date: January 29, 2001

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

Name: 1) Samsung SDI CO., Ltd.

Address: 575 Sing-Dong Paldal-gu

Suwong-City, Kyungki-Do

Republic of Korea

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

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)

09/742,340

B. Patent No.(s)

Additional numbers attached? Yes No

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

Name: Charles F. Wieland III

Address: BURNS, DOANE, SWECKER & MATHIS, L.L.P.

P.O. Box 1404

Alexandria, Virginia 22313-1404

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR § 3.41): \$ 40.00

Enclosed

Authorized to be charged to deposit account, if necessary

8. Deposit account number:

02-4800

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.

Charles F. Wieland III, Reg. No. 33,096
Name of Person Signing

Signature

May 30, 2003
Date

Total number of pages including cover sheet, attachments, and document: 4

Mail documents to be recorded with required cover sheet information to:

Director of the United States Patent and Trademark Office
Mail Stop Assignment Recordation Services
P.O. Box 1450
Alexandria, VA 22313-1450

06/03/2003 DBYRNE 00000186 09742340

01 FC:8021

40.00 OP

PATENT
REEL: 014118 FRAME: 0991

(05/03)

2. Additional receiving party:

- 2) ZAO Scientific Production Firm (SPF)
8 Kulakov Avenue
Stavropol 355036
Russian Federation

ASSIGNMENT

(JOINT)

THIS ASSIGNMENT, by (1) SHANG-HYEUN PARK, (2) JI-HYE GWAK, (3) YONG-WAN JIN, (4) V.A. VOROBYOV, and (5) E.G. MOROZOV, residing at (1) 4-110 HEUNGHWA APT., 503-17 DAECHEON 2-DONG, BORYUNG-CITY, CHUNGCHONGNAM-DO, REPUBLIC OF KOREA, (2) 173-101 MYUNMOK 5-DONG, CHUNGNANG-GU, SEOUL, REPUBLIC OF KOREA, (3) 11-106 SINDONGA APT., 272 BANGHAK 3-DONG, DOBONG-GU, SEOUL, REPUBLIC OF KOREA, (4) C/O ZAO SCIENTIFIC PRODUCTION FIRM (SPF) LUMINOPHOR, 8 KULAKOV AVE., STAVROPOL 355036, RUSSIAN FEDERATION, and (5) C/O ZAO SCIENTIFIC PRODUCTION FIRM (SPF) LUMINOPHOR, 8 KULAKOV AVE., STAVROPOL 355036, RUSSIAN FEDERATION (hereinafter referred to as "the Assignors"), respectively, witnesseth:

WHEREAS, the Assignors have invented certain new and useful improvements in YTTRIUM SILICATE BASED PHOSPHOR HAVING EFFECTIVE VOLTAGE AT LOW VOLTAGES AND METHOD FOR SYNTHESIZING THE SAME set forth in an application for Letters Patent of the United States,

- (1) which is a provisional application
 - (a) to be filed herewith; or
 - (b) bearing Application No. and filed on ; or

- (2) which is a non-provisional application
 - (a) having an oath or declaration executed on even date herewith prior to filing of application;
 - (b) bearing Application No. 09/742,340 and filed on December 22, 2000 or
 - (c) to be filed; and

WHEREAS, (1) SAMSUNG SDI CO., LTD. AND (2) ZAO SCIENTIFIC PRODUCTION FIRM (SPF) LUMINOPHOR, corporations duly organized under and pursuant to the laws of (1) REPUBLIC OF KOREA, AND (2) RUSSIA and having its principal place of business at (1) 575 SHIN-DONG, PALDAL-GU, SIWON-CITY, KYUNGKI-DO, REPUBLIC OF KOREA, AND (2) 8 KULAKOV AVE., STAVROPOL 355036, RUSSIAN FEDERATION (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, in consideration of One Dollar (\$1.00) and other good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behalf and the use and behalf of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including

provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

AND the Assignors hereby authorize and request the attorneys of BURNS, DOANE, SWECKER & MATHIS, L.L.P. of Alexandria, Virginia, to insert in the spaces provided above the filing date, application number, and attorney docket number of said application when known.

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said inventions, the Letters Patent to be issued for the sole use and behalf of the Assignee, its successors, legal representatives, and assigns.

Date 19 January 2001 Signature of Assignor 
Shang-hyeun Park

Date 19 January 2001 Signature of Assignor 
Ji-hye Gwak

Date 19 January 2001 Signature of Assignor 
Yong-wan Jin

Date _____ Signature of Assignor _____

Date 19.1.2001 Signature of Assignor 
V.A. Vorobyov

Date 10.1.2001 Signature of Assignor 
E.G. Morozov

Date _____ Signature of Assignor _____

Date _____ Signature of Assignor _____