

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
KUANHSIUNG CHEN	06/17/2016
MINGHWEI HONG	06/23/2016
JUEINAI KWO	06/22/2016
YEN-HSUN LIN	06/24/2016
KENG-YUNG LIN	06/23/2016
RECEIVING PARTY DATA	
Name:	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
Street Address:	NO. 8, LI-HSIN RD. 6
Internal Address:	SCIENCE-BASED INDUSTRIAL PARK
City:	HSIN-CHU
State/Country:	TAIWAN
Postal Code:	300-77
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16393570
CORRESPONDENCE DATA	
Fax Number:	(214)200-0853
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Phone:	2146515000
Email:	ipdocketing@haynesboone.com
Correspondent Name:	HAYNES AND BOONE, LLP
Address Line 1:	2323 VICTORY AVENUE
Address Line 2:	SUITE 700
Address Line 4:	DALLAS, TEXAS 75219
ATTORNEY DOCKET NUMBER:	24061.3217US02
NAME OF SUBMITTER:	ELIZABETH BEASTERFIELD
SIGNATURE:	/Elizabeth Beasterfield/
DATE SIGNED:	04/24/2019

Total Attachments: 3

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ASSIGNMENT

WHEREAS, we,

- | | | | |
|-----|-----------------|----|---------------------------------|
| (1) | Kuanhsiung Chen | of | Hsin-Chu 300-77, Taiwan, R.O.C. |
| (2) | Minghwei Hong | of | Hsin-Chu 300-77, Taiwan, R.O.C. |
| (3) | Jueimai Kwo | of | Hsin-Chu 300-77, Taiwan, R.O.C. |
| (4) | Yen-Hsun Lin | of | Hsin-Chu 300-77, Taiwan, R.O.C. |
| (5) | Keng-Yung Lin | of | Hsin-Chu 300-77, Taiwan, R.O.C. |

have invented certain improvements in

SINGLE-CRYSTAL RARE EARTH OXIDE GROWN ON III-V COMPOUND

for which we have filed an application for Letters Patent of the United States of America on May 27, 2016, and assigned U.S. Serial number 15/166,338; and

WHEREAS, we authorize the attorney of record to update this document to include Patent Office information as deemed necessary (i.e., filing date, serial number, etc.);

WHEREAS, TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD., ("TSMC"), No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park Hsin-Chu, Taiwan 300-77, Republic of China and NATIONAL TAIWAN UNIVERSITY ("NTU"), No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan, Republic of China are desirous of obtaining the entire right, title, and interest in, to and under the said invention and the said application in the United States of America and in any and all countries foreign thereto;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and other good and valuable consideration, we have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said TSMC and NTU, its successors, legal representatives, and assigns, the entire right, title, and interest in, to and under the said invention, and the said application, and all divisional, renewal, substitutional, and continuing applications thereof, and all Letters Patent of the United States of America which may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent which may be filed for said invention in any country or countries foreign to the United States of America, and all extensions, renewals, and reissues thereof, and all prior patents and patent applications from which a filing priority of the above-described patent application may be obtained, including the right to collect past damages; and we hereby authorize and request the Commissioner of Patents of the United States of America, and any official of any country or countries foreign to the United States of America, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said invention to the said TSMC and NTU, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

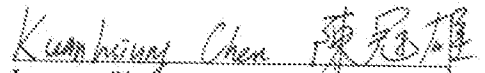
AND WE HEREBY covenant that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to said TSMC and NTU, its successors, legal representatives and assigns, any facts known to us respecting said invention, and testify in any legal proceedings, sign all lawful papers, execute all divisional, renewal, substitutional, continuing, and reissue applications, make all rightful declarations and/or oaths and generally do everything possible to aid the said TSMC and NTU, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said invention in all countries.

Inventor Name: Kuanhsung Chen

Residence Address: Hsin-Chu 300-77, Taiwan, R.O.C.

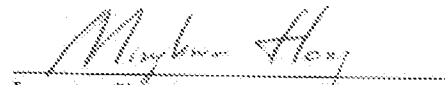
Dated: 2016/16/17


Inventor Signature

Inventor Name: Minghwei Hong

Residence Address: Hsin-Chu 300-77, Taiwan, R.O.C.

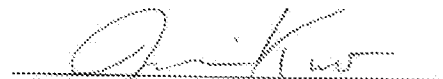
Dated: 6.22.2016


Inventor Signature

Inventor Name: Jueina Kwo

Residence Address: Hsin-Chu 300-77, Taiwan, R.O.C.

Dated: 6.22.2016


Inventor Signature

Docket No.: 20150933US0/24061.3217US1

Customer No.: 42717

Inventor Name: Yen-Hsun Lin

Residence Address: Hsin-Chu 300-77, Taiwan, R.O.C.

Dated: 6. 24. 2016

Yen-Hsun Lin
Inventor Signature

Inventor Name: Keng-Yung Lin

Residence Address: Hsin-Chu 300-77, Taiwan, R.O.C.

Dated: 6. 23. 2016

Keng-Yung Lin
Inventor Signature