

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4213521

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
SHENG-HUNG SHIH	02/26/2016
KUO-CHI TU	03/03/2016
CHIH-YANG CHANG	02/26/2016
HSIA-WEI CHEN	02/26/2016
CHIN-CHIEH YANG	03/02/2016
JEN-SHENG YANG	02/26/2016
WEN-TING CHU	03/03/2016
YU-WEN LIAO	02/26/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD.
<b>Street Address:</b>	NO. 8, LI-HSIN RD. 6
<b>Internal Address:</b>	HSIN-CHU SCIENCE PARK
<b>City:</b>	HSIN-CHU
<b>State/Country:</b>	TAIWAN
<b>Postal Code:</b>	300-77
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	15399977
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(216)502-0601
<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>	
<b>Phone:</b>	216-502-0600
<b>Email:</b>	docketing@eschweilerlaw.com
<b>Correspondent Name:</b>	ESCHWEILER & ASSOCIATES, LLC.
<b>Address Line 1:</b>	629 EUCLID AVENUE, SUITE 1000
<b>Address Line 2:</b>	NATIONAL CITY BANK BUILDING
<b>Address Line 4:</b>	CLEVELAND, OHIO 44114
<b>ATTORNEY DOCKET NUMBER:</b>	TSMCP589USA
<b>NAME OF SUBMITTER:</b>	JAMES R. POTASHNIK

PATENT

<b>SIGNATURE:</b>	/James R. Potashnik/
<b>DATE SIGNED:</b>	01/06/2017
<b>Total Attachments: 10</b> source=Assignment#page1.tif source=Assignment#page2.tif source=Assignment#page3.tif source=Assignment#page4.tif source=Assignment#page5.tif source=Assignment#page6.tif source=Assignment#page7.tif source=Assignment#page8.tif source=Assignment#page9.tif source=Assignment#page10.tif	

PATENT ASSIGNMENT

PARTIES TO THE ASSIGNMENT

Assignor(s):

Sheng-Hung Shih  
No. 8, Li-Hsin Rd. 6, Hsin-Chu Science Park  
Hsin-Chu, Taiwan 300-77  
Republic of China

Assignor(s):

Kuo-Chi Tu  
No. 8, Li-Hsin Rd. 6, Hsin-Chu Science Park  
Hsin-Chu, Taiwan 300-77  
Republic of China

Assignor(s):

Chih-Yang Chang  
No. 8, Li-Hsin Rd. 6, Hsin-Chu Science Park  
Hsin-Chu, Taiwan 300-77  
Republic of China

Assignor(s):

Hsia-Wei Chen  
No. 8, Li-Hsin Rd. 6, Hsin-Chu Science Park  
Hsin-Chu, Taiwan 300-77  
Republic of China

Assignor(s):

Chin-Chieh Yang  
No. 8, Li-Hsin Rd. 6, Hsin-Chu Science Park  
Hsin-Chu, Taiwan 300-77  
Republic of China

Assignor(s):

Jen-Sheng Yang  
No. 8, Li-Hsin Rd. 6, Hsin-Chu Science Park  
Hsin-Chu, Taiwan 300-77  
Republic of China

Assignor(s):

Wen-Ting Chu  
No. 8, Li-Hsin Rd. 6, Hsin-Chu Science Park  
Hsin-Chu, Taiwan 300-77  
Republic of China

Assignor(s):

Yu-Wen Liao  
No. 8, Li-Hsin Rd. 6, Hsin-Chu Science Park  
Hsin-Chu, Taiwan 300-77  
Republic of China

Assignee:

Taiwan Semiconductor Manufacturing Co., Ltd.  
No. 8, Li-Hsin Rd. 6, Hsin-Chu Science Park  
Hsin-Chu, Taiwan 300-77  
Republic of China

AGREEMENT

WHEREAS, ASSIGNOR(S) (listed above) are inventor(s) of an invention entitled  
"RRAM CELL WITH PMOS ACCESS TRANSISTOR" for which:

a non-provisional application for United States Letters Patent:

☒ was executed on even date preparatory to filing (each inventor should sign this  
Assignment on the same day as he/she signs the Declaration); or

☐ was filed on \_\_\_\_\_ and accorded U.S. Serial No. \_\_\_\_\_; or

☐ I hereby authorize and request my attorney associated with Customer No.  
107476, to insert on the designated lines below the filing date and application  
number of said application when known:

U.S. Serial No. \_\_\_\_\_

filed on \_\_\_\_\_

WHEREAS, ASSIGNEE (listed above), a corporation of the Republic of China is  
desirous of acquiring the entire right, title and interest in and to the invention and in and to  
any letters patent that may be granted therefore in the United States and in any and all  
foreign countries;

NOW, THEREFORE, in exchange for good and valuable consideration, the receipt of  
which is hereby acknowledged, ASSIGNOR(S) hereby sell, assign and transfer unto  
ASSIGNEE its successors and assigns, the entire right, title and interest in and to said  
invention and improvements, said application and any and all letters patent which may be  
granted for said invention in the United States of America and its territorial possessions and

TSMC Docket No. P20150407US00  
Docket No. TSMCP589US

in any and all foreign countries, and in any and all divisions, reissues, re-examinations and continuations thereof, including the right to file foreign applications directly in the name of ASSIGNEE and to claim priority rights deriving from said United States application to which said foreign applications are entitled by virtue of international convention, treaty or otherwise, said invention, application and all letters patent on said invention to be held and enjoyed by ASSIGNEE and its successors and assigns for their use and benefit and of their successors and assigns as fully and entirely as the same would have been held and enjoyed by ASSIGNOR(S) had this assignment, transfer and sale not been made. ASSIGNOR(S) hereby authorize and request the Commissioner of Patents and Trademarks to issue all letters patent on said invention to ASSIGNEE. ASSIGNOR(S) agree to execute all instruments and documents required for the making and prosecution of applications for United States and foreign letters patent on said invention, for litigation regarding said letters patent, or for the purpose of protecting title to said invention or letters patent therefore.

2016 / 12 / 26  
Date

Sheng - Hung Shih  
Name 1<sup>st</sup> Inventor Sheng-Hung Shih

TSMC Docket No. P20150407US00  
Docket No. TSMCP589US

March 3, 2016  
Date

Kuo-Chi Tu  
Name 2<sup>nd</sup> Inventor Kuo-Chi Tu

TSMC Docket No. P20150407US00  
Docket No. TSMCP589US

2016, 2/26  
Date

Chih-Yang Chang  
Name 3<sup>rd</sup> Inventor Chih-Yang Chang

TSMC Docket No. P20150407US00  
Docket No. TSMCP589US

2/26 2016  
Date

Hsia-Wei Chen  
Name 4<sup>th</sup> Inventor Hsia-Wei Chen



TSMC Docket No. P20150407US00  
Docket No. TSMCP589US

2016/03/02  
Date

Chin - Chieh Yang  
Name 5<sup>th</sup> Inventor Chin-Chieh Yang

TSMC Docket No. P20150407US00  
Docket No. TSMCP589US

2016/2/26  
Date

Jen Sheng Yang  
Name 6<sup>th</sup> Inventor Jen Sheng Yang

TSMC Docket No. P20150407US00  
Docket No. TSMCP589US

2/27, 2016  
Date

Wen-Ting Chu  
Name 7<sup>th</sup> Inventor Wen-Ting Chu

TSMC Docket No. P20150407US00  
Docket No. TSMCP589US

2016/02/26  
Date

Yu-Wen Liao  
Name 8<sup>th</sup> Inventor Yu-Wen Liao