PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
KUO-CHI TU	10/19/2015
CHIN-CHIEH YANG	10/19/2015
WEN-TING CHU	10/19/2015

RECEIVING PARTY DATA

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City:	HSIN-CHU	
State/Country:	TAIWAN	
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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15942760

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ATTORNEY DOCKET NUMBER:	TSMCP605USB
NAME OF SUBMITTER:	JAMES R. POTASHNIK
SIGNATURE: /James R. Potashnik/	
DATE SIGNED:	04/02/2018

Total Attachments: 5

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> **PATENT REEL: 045408 FRAME: 0666** 504847897



PATENT REEL: 045408 FRAME: 0667

PATENT ASSIGNMENT

PARTIES TO THE ASSIGNMENT

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):

Chin-Chieh 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

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

"SERIES MIM STRUCTURES COMPATIBLE WITH RRAM PROCESS" for which:

a non-provisional application for United States Letters Patent:

\boxtimes	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:

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Attachment 15a

PATENT REEL: 045408 FRAME: 0668

TSMC Docket No. P20150544US00 Docket No. TSMCP605US

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 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.

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Attachment 15a

TSMC Docket No. P20150544US00 Docket No. TSMCP605US

10/19/2015

Date

/ Kuo - Chi Tu

Name 1st Inventor Kuo-Chi Tu

 $\sqrt{\frac{10/19/2015}{\text{Date}}}$

Name 2nd Inventor Chin-Chieh Yang

TSMC Docket No. P20150544US00 Docket No. TSMCP605US

Name 3rd Inventor Wen-Ting Chu

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RECORDED: 04/02/2018