504654393 11/22/2017

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
HAI-DANG TRINH	10/27/2017
HSING-LIEN LIN	10/27/2017
HSIA-WEI CHEN	10/27/2017

RECEIVING PARTY DATA

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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15793095

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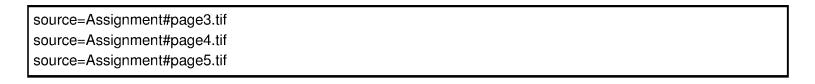
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NAME OF SUBMITTER:	JAMES R. POTASHNIK
SIGNATURE:	/James R. Potashnik/
DATE SIGNED:	11/22/2017

Total Attachments: 5

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PATENT 504654393 REEL: 044198 FRAME: 0075



PATENT REEL: 044198 FRAME: 0076



(TT)

PATENT ASSIGNMENT

PARTIES TO THE ASSIGNMENT

Assignor(s): Hai-Dang Trinh

Assignor(s): Hsing-Lien Lin

Assignor(s): Hsia-Wei Chen

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

"RECAP LAYER SCHEME TO ENHANCE RRAM PERFORMANCE" 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:
	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 Page 1 of 5

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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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TSMC Docket No. P20171239US00 Docket No. TSMCP815US

Hai-Dang Trink. 1st Inventor Hai-Dang Trinh

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19/27/20/1

Name 2nd Inventor Hsing-Lien Lin

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Date (0/20/7

Name 3rd Inventor Hsia-Wei Chen

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