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	03/05/2020
CHII-MING WU	03/15/2020
CHENG-YUAN TSAI	03/06/2020
TZU-CHUNG TSAI	03/05/2020
FA-SHEN JIANG	03/05/2020

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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	18335176

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NAME OF SUBMITTER:	JIM REUTER
SIGNATURE:	/Jim Reuter/
DATE SIGNED:	06/15/2023

PATENT REEL: 063956 FRAME: 0110 507960882

Total Attachments: 7 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

PATENT REEL: 063956 FRAME: 0111



PATENT ASSIGNMENT

PARTIES TO THE ASSIGNMENT

Assignor(s):
Hai-Dang Trinh
Assignor(s):
Chii-Ming Wu
Assignor(s):
Cheng-Yuan Tsai
Assignor(s):
Tzu-Chung Tsai

Assignor(s): Fa-Shen Jiang

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

<u>AGREEMENT</u>

WHEREAS, ASSIGNOR(S) (listed above) are inventor(s) of an invention entitled "DATA STORAGE STRUCTURE FOR IMPROVING MEMORY CELL RELIABILITY" for which:

a non-	provisional application for United States Letters Patent
⊠ wa	as executed on even date preparatory to filing (each inventor should sign this
As	ssignment on the same day as he/she signs the Declaration); or
☐ wa	as filed on and accorded U.S. Serial No or
	hereby authorize and request my attorney associated with Customer No
10	17476, to insert on the designated lines below the filing date and application
nu	imber of said application when known:

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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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Date

Name 1st Inventor Hai-Dang Trinh

TSMC Docket No. P2019 15880500 Docket No. 15MCP110805

Date

7020/3/15

Name 2" Inventor ChieMing Wo

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3/6/2020 Date

Na

Name 3rd Inventor Cheng-Yuan Tsai

Date

Name 4th Inventor Tzu-Cheng Tsai

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TSMC Docket No. P20191588US00 Docket No. TSMCP1102US

2024/05/05

Date

Fa-Shen Jiang

Name 5th Inventor Fa-Shen Jiang

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