

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
TZU-CHUNG TSAI	03/28/2021
PING-CHENG KO	06/11/2019
FANG-YU LIU	06/11/2019
JHIH-YUAN YANG	06/12/2019
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PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	17216247
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DATE SIGNED:	03/30/2021
Total Attachments: 4	
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DECLARATION AND ASSIGNMENT

Title of Invention: SEMICONDUCTOR DIE CARRIER STRUCTURE

As a below named inventor, or one of the below named joint inventors, I hereby declare that:

This declaration and assignment is directed to the application attached hereto. If the application is not attached hereto, the application is as identified by the attorney docket number as set forth above and/or the following:

United States Application No. or PCT International Application No.: , filed on .

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the above-identified application, including the claims.

I am aware of the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56.

All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

I hereby acknowledge that any willful false statement made in this declaration may jeopardize the validity of the application or any patent issuing thereon and is punishable under 18 U.S.C. §1001 by fine or imprisonment of not more than five (5) years, or both.

The above-identified invention shall henceforth be referred to herein as the "INVENTION" and the above-identified application shall henceforth be referred to herein as the "APPLICATION."

Taiwan Semiconductor Manufacturing Company, Ltd., a corporation organized and existing under the laws of Taiwan, with its principal office at 8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu, 300-78, Taiwan and its heirs, successors, legal representatives and assigns shall henceforth be referred to collectively herein as ASSIGNEE.

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have assigned and do hereby assign to ASSIGNEE, its successors and assigns, my entire right, title and interest in and to said INVENTION and in and to said APPLICATION and all patents which may be granted therefor, and all future non-provisional applications including, but not limited to, divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner for Patents to issue all patents for said INVENTION, or patents resulting therefrom, insofar as my interest is concerned, to ASSIGNEE, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

Additionally, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I have also assigned and hereby assign to ASSIGNEE, its successors and assigns, all of my rights to the INVENTION disclosed in said APPLICATION, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and I further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such rights.

I hereby further agree that I will communicate to ASSIGNEE, or to its successors, assigns, and legal representatives, any facts known to me respecting said INVENTION or the file history thereof, and at the expense of ASSIGNEE, its legal representatives, successors, or assigns, will testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid ASSIGNEE, its legal representatives, successors, and assigns, to obtain and enforce proper patent protection for said invention in all countries.

I hereby grant the attorney of record the power to insert on this document any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or other authority for recordation of this document.

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year.

NAME OF INVENTOR (Full Legal Name) : Tzu-Chung TSAI

Signature: / Tzu-Chung TSAI /

Date: 3/28/2021

ASSIGNMENT

In consideration of the sum of One Dollar (\$1.00) or equivalent and other good and valuable consideration paid to each of the undersigned inventors: **Tzu-Chong TSAI, Ping-Cheng KO, Jhih-Yuan YANG and Fang-yu LIU**, hereby sell and assign to **Taiwan Semiconductor Manufacturing Co., Ltd.**, a corporation formed under the laws of Taiwan, whose mailing address is No. 8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu, Taiwan 300-77 (hereafter referred to as the Assignee), his/her entire right, title and interest, including the right to sue for past infringement and to collect for all past, present and future damages, for the United States of America (as defined in 35 U.S.C. § 100) and throughout the world,

(a) in the invention(s) known as **SEMICONDUCTOR DIE CARRIER STRUCTURE** for which application(s) for patent in the United States of America has a filing date or a 371(c) date of _____ (also known as United States Application No. _____), in any and all applications thereon, in any and all Letters Patent(s) therefor, and

(b) in any and all applications that claim the benefit of the patent application listed above in part (a), including non-provisional applications, continuing (continuation, divisional, or continuation-in-part) applications, reissues, extensions, renewals and reexaminations of the patent application or Letters Patent therefor listed above in part (a), to the full extent of the term or terms for which Letters Patents issue, and

(c) in any and all inventions described in the patent application listed above in part (a), and in any and all forms of intellectual and industrial property protection derivable from such patent application, and that are derivable from any and all continuing applications, reissues, extensions, renewals and reexaminations of such patent application, including, without limitation, patents, applications, utility models, inventor's certificates, and designs together with the right to file applications therefor; and including the right to claim the same priority rights from any previously filed applications under the International Agreement for the Protection of Industrial Property, or any other international agreement, or the domestic laws of the country in which any such application is filed, as may be applicable;

all such rights, title and interest to be held and enjoyed by the above-named Assignee, its successors, legal representatives and assigns to the same extent as all such rights, title and interest would have been held and enjoyed by the undersigned inventors had this assignment and sale not been made.

The undersigned inventors agree to execute all papers necessary in connection with the application(s) and any non-provisional, continuing (continuation, divisional, or continuation-in-part), reissue, reexamination or corresponding application(s) thereof and also to execute separate assignments in connection with such application(s) as the Assignee may deem necessary or expedient.

The undersigned inventors agree to execute all papers necessary in connection with any judicial or administrative proceeding, including but not limited to an interference, derivation, post-grant proceeding, or patent enforcement action (judicial or otherwise) related to the application(s) or any non-provisional, continuing (continuation, divisional, or continuation-in-part), reissue or reexamination application(s) thereof or Letters Patent(s) therefor and to cooperate with the Assignee in every way possible in obtaining evidence and assisting with such judicial or administrative proceeding.

The undersigned inventors hereby represent that he/she has full right to convey the entire interest herein assigned, and that he/she has not executed, and will not execute, any agreement in conflict therewith.

The undersigned inventors hereby grant the patent practitioners associated with **CUSTOMER NUMBER 134593** the power to insert in this assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

The undersigned inventors hereby represent that he/she understands that the patent practitioners associated with **CUSTOMER NUMBER 134593** are the legal representatives of, and attorneys for, the assignee, and are NOT the legal representatives of, and attorneys for, the inventors.

IN WITNESS WHEREOF, executed by the undersigned inventors on the date opposite his/her name.

Date: 2019.6.11

Signature of Inventor:

Tzu-Chong TSAI
Tzu-Chong TSAI

Date: 2019.6.11

Signature of Inventor:

Ping-Cheng KO
Ping-Cheng KO

Date: 2019.6.12

Signature of Inventor:

Jih-Yuan YANG
Jih-Yuan YANG

Date: 2019.6.11

Signature of Inventor:

Fang-yu LIU
Fang-yu LIU