IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

HARBOR ISLAND DYNAMIC, LLC, Plaintiff, v. SAMSUNG ELECTRONICS CO., LTD., and SAMSUNG ELECTRONICS AMERICA, INC. Defendants.	Case No. 2:24-cv-00140-JRG-RSP

DECLARATION OF DEAN NEIKIRK, PH.D.

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I, Dean P. Neikirk, Ph.D., declare as follows:

I. Introduction

1. My name is Dean Neikirk. I have been asked to submit this declaration on behalf of defendants Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc. (collectively "Defendants"), in connection with a claim construction proceeding in the above-captioned matter. Specifically, I have been asked to share my opinions regarding the meaning of certain terms used in the claims of U.S. Patent No. 7,745,886 ("the '886 patent") and U.S. Patent No. 9,245,826 ("the '826 patent"), as understood by a person having ordinary skill in the art ("POSITA") as of the earliest priority dates and/or during prosecution of the patents.[1] I have been told the Defendants intend to submit this declaration to the Court in support of their positions regarding the proper construction of these terms.

2. I am being compensated for my time spent on the present matter at a rate of $800 per hour. My compensation is not in any way contingent on my performance, the result of this proceeding, or any of the issues involved therein. I am also being reimbursed for expenses incurred as a result of activities performed as an expert.

3. My opinions, based on my experience, knowledge of the art at the relevant time, analysis of the '886 and '826 patents, and the understanding a POSITA would have in view of the patent's specification, are discussed below.

II. Qualifications and Background

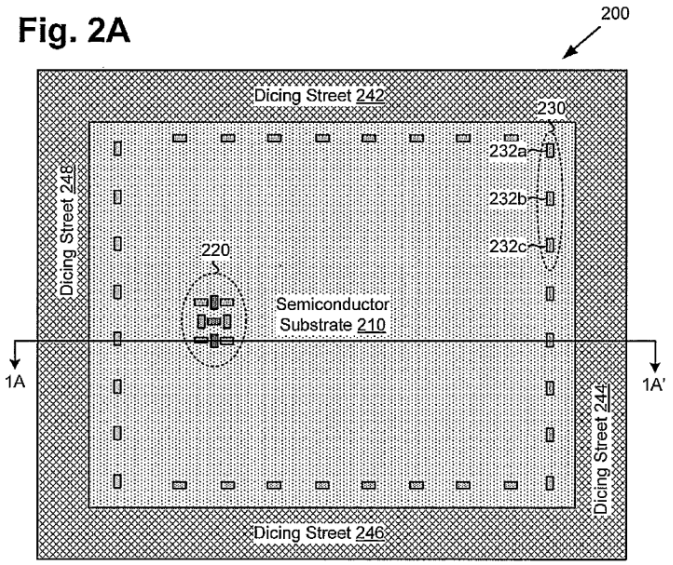
4. I received a Bachelor of Science degree from Oklahoma State University, in physics and mathematics, in 1979.

[1] The '886 patent claims priority to December 10, 2007, while the '826 patent claims priority to March 11, 2013.

A. "[disposed] in at least one corner of a semiconductor substrate" (claims 1, 11)

47. Independent claims 1 and 11 both recite that the anchor via is "[disposed] in at least one corner of a semiconductor substrate." In my opinion, the claims, specification, and file history fail to inform a POSITA, with reasonable certainty, what qualifies as "in" a corner.

48. The specification describes that the "anchor vias [are] fabricated along the periphery of a semiconductor substrate and bonded to the backside metal layer to improve backside metal adhesion to the semiconductor substrate." *Id.*, 2:44-47. The periphery region includes edges and corners of the semiconductor substrate, where "singulation of [the] semiconductor substrate [] without the use of anchor vias may result in a backside metal stack peeling from the edges and/or corners of the substrate." *Id.*, 4:33-36; *see also id*., 6:19-22. For example, Figure 2A "provides a backside view of semiconductor substrate 210" in which a plurality of anchor vias, "such as anchor via 232*a*, anchor via 232*b*, and anchor via 232*c*," are fabricated along the periphery of the semiconductor substrate.

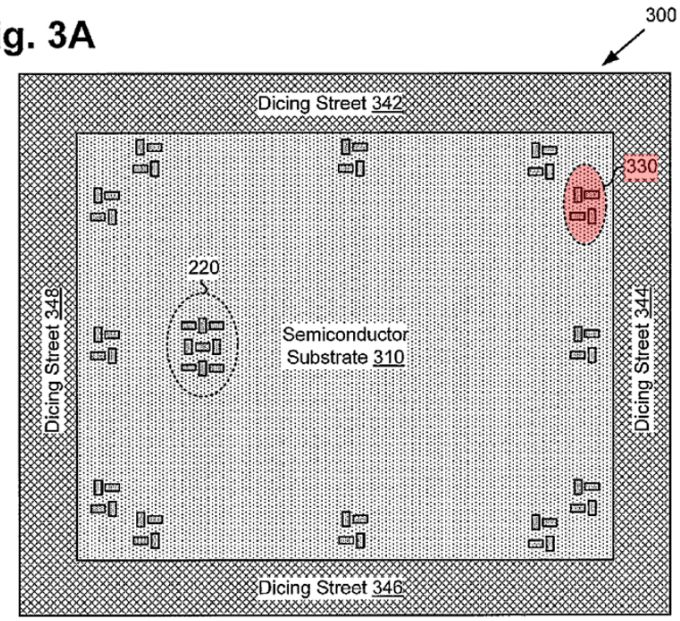


Id., 4:16-25, Fig. 2A. The specification stresses that "[a]lthough several anchor vias are shown [in Figure 2A] along ***the edges and in the corners*** of semiconductor substrate 220, the present

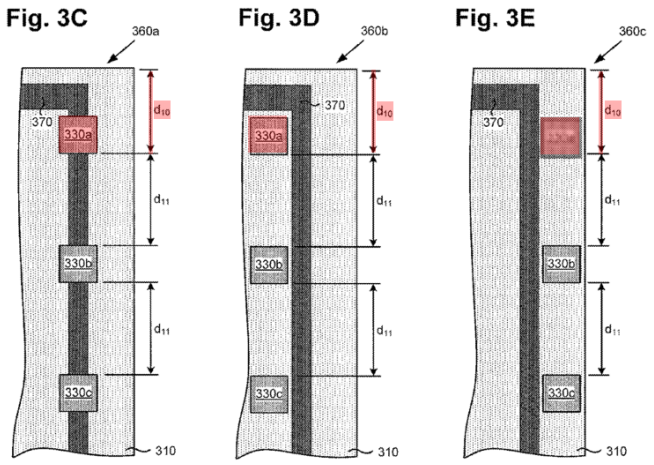
inventive concepts may include at least one anchor via placed ***in at least one corner*** of the semiconductor substrate." *Id*., 4:21-25 (emphases added). However, the specification does not explain which anchor vias in this example are disposed in a corner, and which ones are located on an edge but not a corner.

49. Other embodiments also do not inform a POSITA how to know what constitutes a via "in" a corner of the substrate. Rather, the specification merely describes that the anchor vias may be disposed near to or in proximity to a corner. *Id*., 6:4-6 ("forming just one anchor via, or a small cluster of anchor vias ***near the corners*** of the semiconductor substrate may be desirable") (emphasis added). For example, Figure 3A shows a "cluster 330 of anchor vias [that] may be fabricated ***proximate to a corner*** of semiconductor substrate 310 in order to prevent the backside metal stack from peeling at the corners of the die."

Fig. 3A



Id., 6:22-25 (emphasis added), Fig. 3A. Moreover, Figures 3C-3E show examples in which a "[c]luster 330*a* of anchor vias may be formed a predetermined distance d_{10} from the corner of semiconductor substrate 310*m* which may ***vary depending on the particular application***."



Id., 6:65-67 (emphasis added), Fig. 3C-3E.

50. But, "near" and "proximate to" are relative terms that do not inform a POSITA where to draw the boundary for what it means to be "in" a corner. And the dependence of the distance d_{10} from the corner on the particular application means the area occupied by the vicinity of the corner will change if the application changes. For example, a wafer can be diced using different singulation methods, such as diamond blade sawing, laser cutting, plasma dicing, or a hybrid thereof. Exhibit B at 1. The damages and stresses caused by different singulation methods to the die may vary. *See id*. Since the '826 patent teaches that the anchor vias are used to hold the backside metal to the substrate against the singulation-induced damages and stresses, a POSITA would understand the distance d_{10} from the corner depends on the singulation method used. '826 patent, 4:34-36, 6:1-6, 6:19-25, 6:36-39, 6:43-46, 7:29-33. In other words, whether an anchor via is disposed in a corner may depend on which singulation method is used.

51. For the above reasons, a POSITA would be unable to ascertain whether and when an anchor via is disposed in a "corner" of a semiconductor, with reasonable certainty, leading to a claim that lacks definiteness.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on this day, April 15, 2025, in Dripping Springs, TX.



Dean Neikirk, Ph.D.

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