

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD. and  
GLOBALFOUNDRIES U.S. INC.,  
Petitioners,

v.

GODO KAISHA IP BRIDGE 1,  
Patent Owner.

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Case No. IPR2016-01377<sup>1</sup>  
Patent Number 6,197,696

Before JUSTIN T. ARBES, MICHAEL J. FITZPATRICK, and  
JENNIFER MEYER CHAGNON, *Administrative Patent Judges*.

**PATENT OWNER'S MOTION FOR  
OBSERVATIONS ON CROSS EXAMINATION**

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<sup>1</sup> GlobalFoundries U.S. Inc., who filed Petition IPR2017-00922, has been joined as  
a petitioner in this proceeding.

Patent Owner Godo Kaisha IP Bridge 1 (“Patent Owner”) respectfully moves for observation of the following testimony from the August 2, 2017 cross-examination by deposition of Dr. Bruce Smith, expert witness for Petitioner Taiwan Semiconductor Manufacturing Company, Ltd. (“Petitioner” or “TSMC”), submitted herewith as EX2040.

1. In EX2040, at 12:14-15:22, Dr. Smith testified about his “interpretation” of the sentence “In this case the second resist pattern 359 is removed during the step of etching the organic film 354,” in ¶93 of EX1014 (Petitioner’s Certified Translation of the ’696 Foreign Priority Document). Dr. Smith testified that he interprets this sentence to mean “the second resist pattern [359] is *at least partially* removed during this step of etching the organic film 354.” EX2040, 15:16-22.<sup>2</sup> This testimony is relevant to Petitioner’s assertions and Dr. Smith’s allegations at EX1050 ¶¶34-36, that Patent Owner “mistakenly suggest that the Japanese ’371 application supports step j) of claim 10” because Dr. Smith asserts that “there is no reason to think second resist pattern 359 is removed before the complete patterning of layer 354.” EX1050 ¶35; *see also* Paper 26 (“Reply”) 13. This testimony is relevant because Petitioner’s and Dr. Smith’s analysis attempts improperly to

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<sup>2</sup> Emphasis added throughout unless otherwise indicated.

rewrite the Japanese Application's express disclosures to avoid the '696 claims being entitled to their earlier priority date.

2. In EX2040, at 16:1-17:20, Dr. Smith testified about Figures 16(b) to 16(c) and 19:41-45 of the '696 patent (EX1001). Dr. Smith was asked, "Is film 354A being used as a mask in etching film 353?" and answered that "***It says that in the specification, but 354A is not – would not be part of the mask that would be etching 353.***" EX2040, 18:3-7. This testimony is relevant because it is inconsistent with and contradicts, in addition to the '696 patent specification itself, (1) Petitioner's argument that layer 354A is "exposed to act as a mask" (Reply 13-14), and (2) the Board's construction of "using [the designated layer] as a mask," which "does not preclude, for example, a layer positioned between an overlying layer and the layer being etched from acting as a mask ... in an instance where the overlying layer also is removed during the etching, and thus, the between layer acts to shield the layer being etched during etching" (Paper 11 at 18 n.7). This testimony is also relevant to Petitioner's assertion (Reply 8-9) and Dr. Smith's opinions in EX1050 ¶¶20-28 regarding alleged "inconsistencies in the '696 patent." This testimony is relevant because it illustrates that Dr. Smith's analysis of Figures 16(c) and 16(d) of the '696 patent ignores and contradicts the express language in the specification, which states, "[n]ext, as shown in FIG. 16(c), the first silicon dioxide film 353 is dry-etched ***using*** the patterned second silicon

dioxide film 355A and *the patterned organic film 354A as a mask ....*” EX1001, 19:41-45. This testimony is also relevant because it is apparent that Dr. Smith did not recognize the inconsistencies in his testimony until Petitioner directed his attention to them through a series of leading questions, and Dr. Smith never addressed or explained those inconsistencies with his earlier testimony or clarified which interpretation he applied. EX2040, 59:16-60:3.

3. In EX2040, at 18:13-20:20, Dr. Smith testified about processing layers 504A, 505A and 503 in Figures 23(b) and 23(c) and 24:7-10 of the '696 patent (EX1001). Dr. Smith testified that “[t]he organic -- first organic film 503 is therefore etched using the patterned first silicon dioxide film 504A as a mask.” EX2040, 19:6-8. Dr. Smith additionally testified that layer “505A *does act as – as the mask for 503*” as shown in Figures 23(b) and 23(c), even though Dr. Smith understands the '696 specification to only say “first organic film 503 is therefore etched using the patterned first silicon dioxide film 504A as a mask.” EX2040, 20:19-20, 19:2-13 (citing EX1001, 24:7-10). This testimony is relevant to Petitioner’s assertions (Reply 8-9) and Dr. Smith’s opinions in EX1050 ¶¶20-28 and Petitioner’s arguments regarding purported “inconsistencies in the '696 patent” concerning whether a buried layer that has a lateral edge “in line and flush with [a lateral] edge of” an overlying layer can act as a mask, because it is inconsistent with those opinions and arguments. Specifically, Dr. Smith previously asserted that the '696

patent is internally inconsistent because, he argued “three examples IPB identified where a buried layer is called a ‘mask’ in the specification” contradict “at least seven examples in the specification where a buried layer that is *not called a ‘mask.’*” EX1050, ¶27. But in the cross-examination testimony, Dr. Smith testified that a layer “505A *does act as – as the mask for 503,*” even though the ’696 specification does not call layer 505A a mask. EX2040, 20:19-20, 19:2-13 (citing EX1001, 24:7-10). This testimony is also relevant to Petitioner’s assertions and Dr. Smith’s opinions in EX1050 ¶¶30-33 regarding whether “the Japanese ’371 application supports step i) of claim 10.” EX1050, ¶30; *see also* Reply 10-11 (“*The specification identifies layer 359, not layer 358, as the mask for etching layer 355 above.*”). This cross-examination testimony is relevant because it illustrates inconsistencies in Petitioner’s and Dr. Smith’s interpretation of the ’696 patent and the Japanese ’371 application. Dr. Smith previously testified that layer 358 is not used as a mask to etch layer 355 because the “Japanese ’371 application *makes no mention* of using layer 358 as a ‘mask’” (EX1050, ¶31; Reply 11), but on cross-examination inconsistently testified that “505A does act as – as the mask for 503” as shown in Figures 23(b) and 23(c), even though this is not described in the detailed description of the ’696 patent (*see, e.g.,* Ex. 1001, 24:7-10). EX2040, 20:19-20.

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