

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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FUJITSU SEMICONDUCTOR LIMITED,  
FUJITSU SEMICONDUCTOR AMERICA, INC.,  
ADVANCED MICRO DEVICES, INC., RENESAS ELECTRONICS  
CORPORATION, RENESAS ELECTRONICS AMERICA, INC.,  
GLOBALFOUNDRIES U.S., INC., GLOBALFOUNDRIES DRESDEN  
MODULE ONE LLC & CO. KG, GLOBALFOUNDRIES DRESDEN  
MODULE TWO LLC & CO. KG, TOSHIBA AMERICA ELECTRONIC  
COMPONENTS, INC., TOSHIBA AMERICA INC., TOSHIBA  
AMERICA INFORMATION SYSTEMS, INC., and  
THE GILLETTE COMPANY,  
Petitioners,

v.

ZOND, LLC,  
Patent Owner

Patent 6,806,652 B1

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IPR Case Nos. IPR2014-00861, 01088, 01089<sup>1</sup>

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**SUPPLEMENTAL DECLARATION OF  
UWE KORTSHAGEN PH.D.  
ON BEHALF OF PETITIONER**

<sup>1</sup> GlobalFoundries, U.S., Inc., GlobalFoundries Dresden Module One LLC & Co. KG, GlobalFoundries Dresden Module Two LLC & Co. KG, and The Gillette Company are the only Petitioners for IPR2014-01088 and IPR2014-01089.

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I, Uwe Kortshagen, declare as follows:

## I. BACKGROUND

1. My name is Uwe Kortshagen.

2. My background is detailed in my declarations submitted with the original Petition for *Inter Partes* Review Case Nos. IPR2014-00861 (Ex. 1102), 01088 (Ex. 1002), and 01089 (Ex. 1202).

3. I have reviewed the following publications in preparing this declaration:

- U.S. Patent No. 6,806,652 (the “652 Patent”) (Exs. 1001, 1101, 1201).
- D.V. Mozgrin, *et al.*, High-Current Low-Pressure Quasi-Stationary Discharge in a Magnetic Field: Experimental Research, Plasma Physics Reports, Vol. 21, No. 5, pp. 400-409, 1995 (“Mozgrin” (Exs. 1003, 1103, 1203)).
- D. W. Fahey, *et al.*, High flux beam source of thermal rare-gas metastable atoms, J. Phys. E; Sci. Instrum., Vol. 13, 1980 (“Fahey” (Exs. 1005, 1105, 1205)).
- A. A. Kudryavtsev, *et al.*, Ionization relaxation in a plasma produced by a pulsed inert-gas discharge, Sov. Phys. Tech. Phys. 28(1), pp. 30-35, January 1983 (“Kudryavtsev” (Exs. 1006, 1106, 1206)).
- U.S. Patent No. 5,753,886 (“Iwamura” (Exs. 1007, 1108, 1208)).

- U.S. Patent No. 3,461,054 (“Vratny” (Ex. 1008)).
- U.S. Patent No. 6,190,512 (“Lantsman” (Ex. 1012)).
- U.S. Patent No. 5,429,070 (“Campbell” (Ex. 1114)).

4. Also, I have reviewed papers in the *Inter Partes* Review Case Nos. IPR2014-00861, 01088, and 01089, including the Petitions and my accompanying Declarations. Further, I have reviewed the Board’s Institution Decisions (“ID”), Patent Owner’s Responses, the accompanying Declaration of Larry D. Hartsough, Ph.D in support of Patent Owner’s Responses (“Hartsough Dec.” (Ex. 2002)), and the deposition testimony of Dr. Hartsough given on May 14, 2015 in connection with Case Nos. IPR2014-00861 (Ex. 1120), 01088 (Ex. 1021), and 01089 (Ex. 1217) (“Hartsough Dep.”).

5. I have read and understood each of the above publications and any other publication cited in this declaration. As I stated previously, the disclosure of each of these publications provides sufficient information for someone to make and use the plasma generation and sputtering processes that are described in the above publications.

6. I have considered certain issues from the perspective of a person of ordinary skill in the art at the time the ’652 Patent application was filed. In my opinion, a person of ordinary skill in the art for the ’652 Patent would have found the ’652 Patent invalid.

7. I have been retained by Petitioner as an expert in the field of plasma technology. I am working as an independent consultant in this matter on behalf of Petitioner and am being compensated at my normal consulting rate of \$450/hour for my time. My compensation is not dependent on and in no way affects the substance of my statements in this declaration.

8. I have no financial interest in the Petitioners. I similarly have no financial interest in the '652 Patent, and have had no contact with the named inventor of the '652 Patent.

## **II. RELEVANT LAW**

9. I am not an attorney. For the purposes of this declaration, I have been informed about certain aspects of the law that are relevant to my opinions. My understanding of the law is detailed in my declaration submitted with the original Petition for *Inter Partes* Review Case Nos. IPR2014-00861, 01088, and 01089, and my understanding remains the same for my instant declaration.

## **III. SUMMARY OF OPINIONS: CLAIMS 1-35**

10. I am unpersuaded by the arguments contained in Patent Owner's Responses and Dr. Hartsough's declaration, as will be explained in greater detail below. I therefore maintain my findings as expressed at (1) Case No. 2014-00861, Ex. 1102, ¶¶ 126-170 captioned Grounds III-VII; (2) Case No. 2014-01088, Ex.

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