

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THE PETITIONERS COMPANY
Petitioner

v.

ZOND, LLC
Patent Owner

U.S. Patent No. 7,811,421

Inter Partes Review Case No. 2014-00800

Inter Partes Review Case No. 2014-00802

Inter Partes Review Case No. 2014-00805

DECLARATION OF LARRY D. HARTSOUGH, Ph.D.

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I, Larry D. Hartsough, Ph.D., hereby declare:

1. I am making this declaration at the request of patent owner Zond, LLC, in the matter of the *Inter Partes Reviews (IPRs)* of U.S. Patent No. 7,811,421 (the “‘421 Patent”), as set forth in the above caption.

2. I am being compensated for my work in this matter at the rate of \$300 per hour. My compensation in no way depends on the outcome of this proceeding.

3. The list of materials I considered in forming the opinions set forth in this declaration includes the ‘421 patent, the file history of the ‘421 patent, the Petitions for Inter Partes Review, the PTAB’s Institution Decisions, and the prior art references discussed below.

I. Education and Professional Background

4. My formal education is as follows. I received a Bachelors of Science degree in 1965, Master of Science degree in 1967, and Ph.D. in 1971, all in Materials Science/Engineering from the University of California, Berkeley.

5. I have worked in the semiconductor industry for approximately 30 years. My experience includes thin film deposition, vacuum system

design, and plasma processing of materials. I made significant contributions to the development of magnetron sputtering hardware and processes for the metallization of silicon integrated circuits. Since the late 1980's, I have also been instrumental in the development of standards for semiconductor fabrication equipment published by the SEMI trade organization.

6. From 1971-1974, I was a research metallurgist in the thin film development lab of Optical Coating Laboratory, Inc. In 1975 and 1976, I developed and demonstrated thin film applications and hardware for an in-line system at Airco Temescal. During my tenure (1977-1981) at Perkin Elmer, Plasma Products Division, I served in a number of capacities from Senior Staff Scientist, to Manager of the Advanced Development activity, to Manager of the Applications Laboratory. In 1981, I co-founded a semiconductor equipment company, Gryphon Products, and was VP of Engineering during development of the product. From 1984-1988, I was the Advanced Development Manager for Gryphon, developing new hardware and process capabilities. During 1988-1990, I was Project Manager at General Signal Thinfilm on a project to develop and prototype an advanced cluster tool for making thin films. From 1991-2002, I was Manager of PVD (physical vapor deposition) Source Engineering for Varian Associates, Thin Film Systems, and then for Novellus Systems, after they purchased TFS.

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