Exhibit 2005

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.GLOBALFOUNDRIES U.S., INC., GLOBALFOUNDRIES DRESDEN
MODULE ONE LLC & CO. KG, GLOBALFOUNDRIES DRESDEN MODULE
TWO LLC & CO. KG
Petitioners

v.

ZOND, LLC
Patent Owner

U.S. Patent No. 7,147,759

Inter Partes Review Case Nos. IPR2014-00781,
00782, 01083, 01086, 01087

DECLARATION OF LARRY D. HARTSOUGH, Ph.D.

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A. The cited references do not teach generating "an amplitude and a rise time of the voltage pulse being chosen to increase an excitation rate of ground state atoms that are

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present in the weakly-ionized plasma to create a multi-step ionization process that generates a strongly-ionized plasma," as recited in independent claim 20 and as similarly required by independent claims 1 and 40..... 56

B. The combination of Wang and Kudryavtsev does not teach a "multi-step ionization process comprising exciting the ground state atoms to generate excited atoms, and then ionizing the excited atoms within the weakly-ionized plasma without forming an arc discharge," as recited in claims 1 and 20, and as similarly recited in claim 40. 65

C. The Combination of Wang, Kudryavtsev and Yamaguchi Does Not Teach "ionizing the feed gas comprises exposing the feed gas to an electrode that is adapted to emit electrons," As Recited In Claim 38. 69

D. The Combination of Muller-Horche's UV source and Wang Would Not Have Taught or Suggested "the ionizing the feed gas comprises exposing the feed gas to at least one of a UV source, an X-ray source, an electron beam source, and an ion beam source," As Recited In Claim 39. 73

E. The Combination of Wang and the Mozgrin's Thesis Does Not Teach that "the rise time of the voltage pulse is approximately between 0.01 and 100 Vμsec," As Recited In Claim 49 And As Similarly Recited in Claim 44. 77

C. The Combination of Wang and Kudryavtsev Would Not Have Taught or Suggested That "applying the electric field comprises applying a substantially uniform electric field," As Recited In Claim 22. 80

D. The Combination of Wang and Kudryavtsev Would Not Have Taught or Suggested That "selecting at least one of a pulse amplitude and a pulse width of the electrical pulse that causes the strongly-ionized plasma to be substantially uniform in an area adjacent to a surface of the sputtering target," As Recited In Dependent Claim 26 And As Similarly Recited in Claim 31..... 82

E. The Combination of Wang and Kudryavtsev Would Not Have Taught or Suggested That "the ions in the strongly-ionized plasma impact the surface of the sputtering target in a substantially uniform manner," As Recited In Claim 30. 84

F. The Combination of Wang and Kudryavtsev Does Not Teach "a temperature controller that controls the temperature of the substrate support," As Recited In Claim 11. 86

G. The Combination of Wang and Muller-Horsche Does Not Teach That "the ionization source is chosen from the group comprising a UV source, an X-ray source, an electron beam source, and an ion beam source," As Recited In Claim 17. 87

H. The Combination of Wang and Kudryavtsev Does Not Teach "a power supply that generates constant power," as recited in dependent claim 2. 90

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I. The Combination of Wang and Kudryavtsev Does Not Teach that "the power supply generates a constant voltage," as recited in claim 3. 92

J. The Combination of Wang and Kudryavtsev Does Not Teach That "the rise time of the voltage pulse is chosen to increase the ionization rate of the excited atoms in the weakly-ionized plasma," As Recited In Dependent Claim 6. 95

K. The Combination of Wang and Kudryavtsev Does Not Teach That "the strongly-ionized plasma is substantially uniform proximate to the sputtering target," As Recited In Dependent Claim 9. 96

L. The Combination of Wang and Kudryavtsev Does Not Teach That "volume between the anode and the cathode assembly is chosen to increase the ionization rate of the excited atoms in the weakly-ionized plasma," As Recited In Dependent Claim 13. 97

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