the original document.

Randy W. Tung Name of Person Signing Registration No. 31,311

792960

Signature

9.2000 September Date

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Washington, D.C. 20231

PATENT

REEL: 011161 FRAME: 0857

67,200-307

ASSIGNMENT

WHEREAS, we, <u>JUIN-JIE CHANG, JIH-CHURNG TWU and RONG-HUI KAO</u> have invented certain improvements in METHOD FOR CLEANING A SILICON-BASED SUBSTRATE WITHOUT NH₄OH VAPOR DAMAGE for which we are about to make application for Letters Patent of the United States; and

WHEREAS, TAIWAN SEMICONDUCTOR MANUFACTURING CO., LTD. of No. 121, Park Avenue 3, Science-Based Industrial Park, Hsin-Chu, Taiwan, R.O.C, is desirous of acquiring the entire right, title and interest in and to said invention;

NOW, THEREFORE, in consideration of One Dollar (\$1.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, we, JUIN-JIE CHANG, JIH-CHURNG TWU and RONG-HUI KAO, by these presents, do hereby sell, assign and transfer unto the said corporation and its assigns, for the territory of the United States of America and all foreign countries, the entire right, title and interest, including all priority rights under the International Convention associated with each country of the Union, in and to said invention as described in the patent application executed by us on the Itek day of August, 2000, preparatory to obtaining Letters Patent of the United States thereon, and in and to said application and any Letters

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PATENT REEL: 011161 FRAME: 0858 Patent that may be granted in pursuance of said application and any divisional, continuation or continuation-in-part application thereof, and in and to any reissue of any such patent, and in and to any patent applications which may be filed on said invention in countries foreign to the United States and any Letters Patent granted thereon.

We further authorize said corporation to apply for foreign patents on said invention in its own name or through its designees, including subsidiaries, related companies or assignees, under the International Convention or otherwise, and we further agree to execute all papers, including those required for the United States and foreign applications, and to perform such other proper acts as said corporation or its designees the rights herein assigned.

Juin-Jie Chang

JUIN-JIE CHANG

on your

JIH-CHURNG TWU

TUNG & ASSOCIATES 838 W. Long Lake Road Suite 120 Bloomfield Hills, Michigan 48302

RECORDED: 09/29/2000

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PATENT REEL: 011161 FRAME: 0859