Mail documents to be recorded with required cover sheet information to:

Commissioner of Patents & Trademarks, Box Assignments

Washington, D.C. 20231

Total number of pages including cover sheet, attachments, and document :_

Registration No. 31,311

REEL: 9637 FRAME: 0328

67,200-128 TSMC 1-98-163

ASSIGNMENT

WHEREAS, we, Kun-lin Guan, Wei-jen Liu and Jin-lang Wu, have invented certain

improvements in APPARATUS AND METHOD FOR PREVENTING CHAMBER

CONTAMINATION, 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, Kun-lin Guan, Wei-jen Liu and Jin-

lang Wu, 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 Arthor day of _______, 1978, preparatory to obtaining Letters Patent of the

United States thereon, and in and to said application and any Letters 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

1

PATENT

REEL: 9637 FRAME: 0329

67,200-128 TSMC 1-98-163

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.

Kun-lin Guan

Wei-jen Liu

Wei-jen Liu

Jin-lang Wu

TUNG & ASSOCIATES 838 W. Long Lake Road

Suite 120

Bloomfield Hills, Michigan 48302

RECORDED: 12/03/1998

2