To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

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<tr>
<th>1 Name of conveying party(ies):</th>
<th>2 Name and address of receiving party(ies):</th>
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<tbody>
<tr>
<td>Tsu-Yu Chu, I-Chung Chang and Kun-Pi Cheng</td>
<td>Taiwan Semiconductor Manufacturing Company, Ltd. No. 121 Park Avenue 3 Science-Based Industrial Park Hsin-Chu, Taiwan, R.O.C.</td>
</tr>
</tbody>
</table>

Execution Date: March 17, 1999

4 Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: 03-17-99

A. Patent Application No(s).

B. Patent No(s) 09/324,129

Additional numbers attached?  □ Yes  □ No

5 Name and address of party to whom correspondence concerning document should be mailed:

Randy W. Tung
Tung & Associates
838 W. Long Lake Road
Suite 120
Bloomfield Hills, Michigan 48302

6 Total number of applications and patents involved: 1

7 Total fee (37 CFR 3.41) $40.00

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Name of Person Signing Registration No. 31,311

Date 6-2-99

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Mail documents to be recorded with required cover sheet information to:
Commissioner of Patents & Trademarks, Box Assignments
Washington, D.C. 20231
ASSIGNMENT

WHEREAS, we, TSU-YU CHU, I-CHUNG CHANG AND KUN-PI CHENG, have invented certain improvements in METHOD AND APPARATUS FOR CONTROLLING THE DOSE OF RADIATION APPLIED TO A SEMICONDUCTOR WaFER DURING PHOTOLITHOGRAPHY 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, TSU-YU CHU, I-CHUNG CHANG AND KUN-PI CHENG, 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 17th day of March, 1999, 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 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.

Tsu-Yu Chu  
Mar. 17, 1999

I-Chung Chang  
Mar. 17, 1999

I-Chung Chang  
Mar. 17, 1999

Kun-Pi Cheng  
Mar. 17, 1999

Kung-Pi Cheng

TUNG & ASSOCIATES  
838 W. Long Lake Road  
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