

## PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Te-Yu Liu</td> <td>05/21/2013</td> </tr> <tr> <td>Ke-Ying Su</td> <td>05/21/2013</td> </tr> <tr> <td>Austin Chingyu Chiang</td> <td>05/21/2013</td> </tr> <tr> <td>Hsiao-Shu Chao</td> <td>05/29/2013</td> </tr> </tbody> </table>		Name	Execution Date	Te-Yu Liu	05/21/2013	Ke-Ying Su	05/21/2013	Austin Chingyu Chiang	05/21/2013	Hsiao-Shu Chao	05/29/2013
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Te-Yu Liu	05/21/2013										
Ke-Ying Su	05/21/2013										
Austin Chingyu Chiang	05/21/2013										
Hsiao-Shu Chao	05/29/2013										
RECEIVING PARTY DATA											
Name:	Taiwan Semiconductor Manufacturing Company, Ltd.										
Street Address:	No. 8, Li-Hsin Rd. 6										
Internal Address:	Science-Based Industrial Park										
City:	Hsin-Chu										
State/Country:	TAIWAN										
Postal Code:	300-77 R.O.C.										
PROPERTY NUMBERS Total: 1											
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13795814</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13795814						
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Application Number:	13795814										
CORRESPONDENCE DATA											
Fax Number:	9727329218										
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>											
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NAME OF SUBMITTER:	Annette Armstrong										

CH \$40.00 13795814

Signature:	/Annette Armstrong/
Date:	06/18/2013
Total Attachments: 1 source=TSM12-1391 Signed Assignment#page1.tif	

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made, the said application having been executed on the date set forth below; and

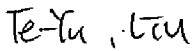

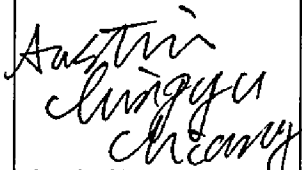

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. (TSMC), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77, R.O.C., is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to the said TSMC, its successors and assigns, my entire right, title and interest in and to the said invention and in to the said application and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner for Patents to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to the said TSMC, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

I also hereby sell and assign to TSMC, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said TSMC, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention or the file history thereof, and at the expense of said assignee company, testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said TSMC, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries.

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year;

TITLE OF INVENTION	Methods and Apparatus for RC Extraction			
SIGNATURE OF INVENTOR AND NAME	 Te-Yu Liu	 Ke-Ying Su	 Austin Chingyu Chiang	 Hsiao-Shu Chao
DATE	2013.05.21	2013.5.21	2013.5.21	2013.5.29
RESIDENCE (City, County, State)	Xinpu Township, Taiwan	Taipei City, Taiwan	New Taipei City, Taiwan	Baoshan Township, Taiwan