

PATENT ASSIGNMENT

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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>Chi-Yuan Chen</td> <td>12/25/2012</td> </tr> <tr> <td>Teng-Chun Tsai</td> <td>12/25/2012</td> </tr> <tr> <td>Kuo-Yin Lin</td> <td>12/26/2012</td> </tr> <tr> <td>Wan-Chun Pan</td> <td>12/25/2012</td> </tr> <tr> <td>Hsiang-Pi Chang</td> <td>12/25/2012</td> </tr> <tr> <td>Shi Ning Ju</td> <td>12/25/2012</td> </tr> <tr> <td>Yen-Yu Chen</td> <td>12/25/2012</td> </tr> <tr> <td>Hongfa Luan</td> <td>12/25/2012</td> </tr> <tr> <td>Kuo-Cheng Ching</td> <td>12/25/2012</td> </tr> </tbody> </table>		Name	Execution Date	Chi-Yuan Chen	12/25/2012	Teng-Chun Tsai	12/25/2012	Kuo-Yin Lin	12/26/2012	Wan-Chun Pan	12/25/2012	Hsiang-Pi Chang	12/25/2012	Shi Ning Ju	12/25/2012	Yen-Yu Chen	12/25/2012	Hongfa Luan	12/25/2012	Kuo-Cheng Ching	12/25/2012
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Kuo-Cheng Ching	12/25/2012																				
RECEIVING PARTY DATA																					
Name:	Taiwan Semiconductor Manufacturing Company																				
Street Address:	No. 8, Li-Hsin Rd. 6																				
Internal Address:	Science-Based Industrial Park																				
City:	Hsin-Chu																				
State/Country:	TAIWAN																				
Postal Code:	300-77																				
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>13730640</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13730640																
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Application Number:	13730640																				
CORRESPONDENCE DATA																					
Fax Number:	9727329218																				
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>																					
Phone:	972-732-1001																				
Email:	docketing@slater-matsil.com																				
Correspondent Name:	Slater & Matsil, L.L.P.																				
Address Line 1:	17950 Preston Road																				

CH \$40.00 13730640

Address Line 2: Suite 1000
Address Line 4: Dallas, TEXAS 75252

ATTORNEY DOCKET NUMBER:	TSM12-1040
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NAME OF SUBMITTER:	Sherry L. Colgrove
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Total Attachments: 3 source=TSM12-1040_Assignment#page1.tif source=TSM12-1040_Assignment#page2.tif source=TSM12-1040_Assignment#page3.tif
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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	Semiconductor Devices and Methods of Manufacture Thereof			
SIGNATURE OF INVENTOR AND NAME	✓ Chi-Yuan Chen Chi-Yuan Chen	✓ Teng-Chun Tsai Teng-Chun Tsai	✓ Kuo-Yin Lin Kuo-Yin Lin	✓ Wan-Chun Pan Wan-Chun Pan
DATE	✓ 2012.12.25	✓ 2012.12.25	✓ 2012.12.26	✓ 12/25, 2012
RESIDENCE (City, County, State)	Hsin-Chu, Taiwan	Tainan City, Taiwan	Jhubei City, Taiwan	Hsinchu City, Taiwan

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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

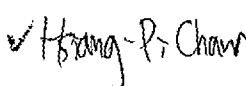
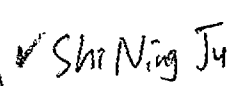
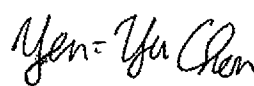
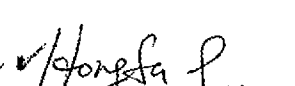
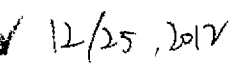
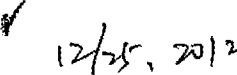
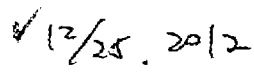
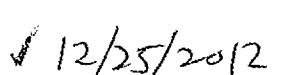
WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. (TSMC), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at No. 8, Li-Hsin Rd. 6, Science-Based Industrial Park, Hsin-Chu, Taiwan 300-77, R.O.C., is desirous of acquiring my entire 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.

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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	Semiconductor Devices and Methods of Manufacture Thereof			
SIGNATURE OF INVENTOR AND NAME	 Hsiang-Pi Chang	 Shi Ning Ju	 Yen-Yu Chen	 Hongfa Luan
DATE	 12/25, 2012	 12/25, 2012	 12/25, 2012	 12/25/2012
RESIDENCE (City, County, State)	New Taipei City, Taiwan	Hsin-Chu, Taiwan	Taipei City, Taiwan	Hsin-Chu, Taiwan

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TITLE OF INVENTION	Semiconductor Devices and Methods of Manufacture Thereof			
SIGNATURE OF INVENTOR AND NAME	Kuo-Cheng Ching <i>Kuo-Cheng Ching</i>			
DATE	<i>2012/12/25</i>			
RESIDENCE (City, County, State)	Zhubei City, Taiwan			