

PATENT ASSIGNMENT COVER SHEET

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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>MING-HUEI SHEN</td> <td>10/19/2010</td> </tr> <tr> <td>TSUN-KAI TSAO</td> <td>10/19/2010</td> </tr> <tr> <td>SHIH-CHANG LIU</td> <td>10/19/2010</td> </tr> <tr> <td>CHIA-SHIUNG TSAI</td> <td>10/19/2010</td> </tr> </tbody> </table>		Name	Execution Date	MING-HUEI SHEN	10/19/2010	TSUN-KAI TSAO	10/19/2010	SHIH-CHANG LIU	10/19/2010	CHIA-SHIUNG TSAI	10/19/2010
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RECEIVING PARTY DATA											
Name:	TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.										
Street Address:	NO. 8, LI-HSIN RD. VI, HSINCHU SCIENCE PARK										
City:	HSINCHU										
State/Country:	TAIWAN										
Postal Code:	300										
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>14185269</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	14185269						
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CORRESPONDENCE DATA											
Fax Number:											
Phone:	7036841111										
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<i>Correspondence will be sent via US Mail when the email attempt is unsuccessful.</i>											
Correspondent Name:	LOWE HAUPTMAN & HAM, LLP (TSMC)										
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Address Line 2:	SUITE 1400										
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ATTORNEY DOCKET NUMBER:	T5057-R347A										
NAME OF SUBMITTER:	RANDY A. NORANBROCK										

Signature:	/Randy A. Noranbrock/
Date:	02/20/2014
Total Attachments: 1 source=Efiledassgn#page 1.tif	

2010-0447

Docket No. T5057-R347

ASSIGNMENT

In consideration of the premises and other good and valuable consideration in hand paid, the receipt and sufficiency of which is hereby acknowledged, the undersigned,

- 1) Ming-Huei SHEN
- 2) Tsun Kai TSAO
- 3) Shih-Chang LIU
- 4) Chia-Shiung TSAI

who has made a certain new and useful invention, hereby sells, assigns and transfers unto

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD. having a place of business at **No. 8, Li-Hsin Rd. VI, Hsinchu Science Park, Hsinchu 300, Taiwan R.O.C.**

its successors and assigns (hereinafter designated "ASSIGNEE") the entire right, title and interest for the United States of America as defined in 35 U.S.C. 100 in the invention entitled

PHASE CHANGE MEMORY CELL

- (a) for which an application for United States Letters Patent was filed on 10-27-10, and identified by United States Patent Application No. 12/913,117; or
- (b) for which an application for United States Letters Patent was executed on _____,

and the undersigned hereby authorizes and requests the United States Commissioner of Patents and Trademarks to issue any and all United States Letters Patent which may be granted therefore and any and all extensions, divisions, reissues, continuations, or continuations-in-part thereof, and the right to all benefits under the International Convention for the Protection of Industrial Property to the said ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns and legal representatives; the undersigned agrees that the attorneys of record in said application shall hereafter act on behalf of said ASSIGNEE;

AND the undersigned hereby agrees to transfer a like interest, and to render all necessary assistance in making application for and obtaining original, divisional, reissued or extended Letters Patent of the United States, upon request of the said ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements, and applications for patent based thereon, growing out of or related to the said invention; and to execute any papers by the said ASSIGNEE, its successors, assigns and legal representatives, deemed essential to ASSIGNEE's full protection and title in and to the invention hereby transferred.

SIGNED on the date indicated aside my signature:

- 1) Ming-Huei Shen
Name: Ming-Huei SHEN
- 2) Tsun Kai Tsao
Name: Tsun Kai TSAO
- 3) Shih-Chang Liu
Name: Shih-Chang LIU
- 4) Chia-Shiung Tsai
Name: Chia-Shiung TSAI

- 2010.10.19
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