

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3480943

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
YUMING ZHU	08/12/2015
YUNCHEN QIU	08/12/2015
CLIVE BITTLESTONE	08/12/2015
SAI ZHANG	08/12/2015
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	TEXAS INSTRUMENTS INCORPORATED
<b>Street Address:</b>	12500 TI BOULEVARD, M/S 3999
<b>City:</b>	DALLAS
<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	75243
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	14824935
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(214)567-2228
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	214-479-1241
<b>Email:</b>	uspto@ti.com
<b>Correspondent Name:</b>	TEXAS INSTRUMENTS INCORPORATED
<b>Address Line 1:</b>	12500 TI BOULEVARD, M/S 3999
<b>Address Line 4:</b>	DALLAS, TEXAS 75243
<b>ATTORNEY DOCKET NUMBER:</b>	TI-75497
<b>NAME OF SUBMITTER:</b>	BRUCE E. HOUSTON
<b>SIGNATURE:</b>	/Bruce E. Houston/
<b>DATE SIGNED:</b>	08/12/2015
<b>Total Attachments: 6</b>	
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source=501e\_TI-75497\_Assignment\_Sai\_Zhang\_USPTO#page2.tif

Serial No.

# 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:

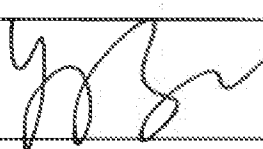
WHEREAS, TEXAS INSTRUMENTS INCORPORATED, a corporation organized and existing under the laws of the State of Delaware, with a place of business at 12500 TI Boulevard, M/S 3999, Dallas, Texas 75243, is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said application and any Letters Patent that may issue thereon;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to the said TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my entire right, title and interest in and to the said invention and to the said application and all patents which may be granted therefore, and all divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner of Patents and Trademarks to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to the said TEXAS INSTRUMENTS INCORPORATED, as assignee of my entire right, title and interest.

I also hereby sell and assign to TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including the right to file applications and obtain patents under the terms of the Paris Convention for the Protection of Industrial Property, 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.

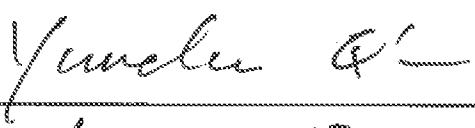
I hereby further agree that I will communicate to said TEXAS INSTRUMENTS INCORPORATED, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention, and at the expense of said assignee company, testify in any legal proceedings, sign all lawful papers, execute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

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

TITLE OF INVENTION	SEMICONDUCTOR MEMORY CELL MULTI-WRITE AVOIDANCE ENCODING APPARATUS, SYSTEMS AND METHODS
SIGNATURE OF INVENTOR AND NAME	 Yuming Zhu
DATE	8/11/2015
RESIDENCE (CITY AND STATE)	4341 Cutter Springs Ct. Plano, TX 75024

TITLE OF INVENTION	SEMICONDUCTOR MEMORY CELL MULTI-WRITE AVOIDANCE ENCODING APPARATUS, SYSTEMS AND METHODS
SIGNATURE OF INVENTOR AND NAME	Manish Goel
DATE	
RESIDENCE (CITY AND STATE)	4417 Helston Drive Plano, TX 75024

SIGNATURE OF INVENTOR AND NAME	Clive Bittlestone
DATE	
RESIDENCE (CITY AND STATE)	120 Danbury Ct. Lucas, TX 75002

SIGNATURE OF INVENTOR AND NAME	Yunchen Qiu 
DATE	Aug 11, 2015
RESIDENCE (CITY AND STATE)	4412 Foxtail Lane Plano, TX 75024

SIGNATURE OF INVENTOR AND NAME	Sai Zhang
DATE	
RESIDENCE (CITY AND STATE)	305 North Lincoln Ave. Apt. 318 Urbana, IL 61801

Serial No.

Attorney Docket No.  
TI-75497

### ASSIGNMENT

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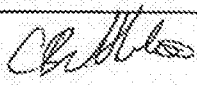
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I hereby further agree that I will communicate to said TEXAS INSTRUMENTS INCORPORATED, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention, and at the expense of said assignee company, testify in 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 TEXAS INSTRUMENTS INCORPORATED, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries.

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SIGNATURE OF INVENTOR AND NAME	Yuming Zhu
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SIGNATURE OF INVENTOR AND NAME	Manish Goel
DATE	
RESIDENCE (CITY AND STATE)	4417 Helston Drive Plano, TX 75024

SIGNATURE OF INVENTOR AND NAME	 Clive Bittlestone
DATE	11 AUG 2015
RESIDENCE (CITY AND STATE)	120 Danbury Ct. Lucas, TX 75002

SIGNATURE OF INVENTOR AND NAME	Yunchen Qiu
DATE	
RESIDENCE (CITY AND STATE)	4412 Foxtail Lane Plano, TX 75024

SIGNATURE OF INVENTOR AND NAME	Sai Zhang
DATE	
RESIDENCE (CITY AND STATE)	305 North Lincoln Ave. Apt. 318 Urbana, IL 61801

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RESIDENCE (CITY AND STATE)	4412 Foxtail Lane Piano, TX 75024

SIGNATURE OF INVENTOR AND NAME	 Sai Zhang
DATE	Aug. 11. 2015
RESIDENCE (CITY AND STATE)	305 North Lincoln Ave. Apt. 318 Urbana, IL 61801