

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
HANGBING LV	01/11/2018
MING LIU	01/11/2018
QI LIU	01/11/2018
SHIBING LONG	01/11/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	THE INSTITUTE OF MICROELECTRONICS OF CHINESE ACADEMY OF SCIENCES
<b>Street Address:</b>	NO. 3 BEI-TU-CHENG WEST ROAD,
<b>Internal Address:</b>	CHAOYANG DISTRICT
<b>City:</b>	BEIJING
<b>State/Country:</b>	CHINA
<b>Postal Code:</b>	100029
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15744064
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<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>	
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<b>ATTORNEY DOCKET NUMBER:</b>	34672_0031
<b>NAME OF SUBMITTER:</b>	MICHELLE C. DUNN
<b>SIGNATURE:</b>	/Michelle C. Dunn/
<b>DATE SIGNED:</b>	01/12/2018
This document serves as an Oath/Declaration (37 CFR 1.63).	

**Total Attachments: 3**

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**ASSIGNMENT**  
(Joint)

THIS ASSIGNMENT, by **Hangbing LV; Ming LIU; Qi LIU; Shibing LONG** (hereinafter referred to collectively as the "Assignors"), witnesseth:

WHEREAS, said Assignors have invented certain new and useful improvements in: PREPARATION METHOD OF CU-BASED RESISTIVE RANDOM ACCESS MEMORY, AND MEMORY, set forth in an application for Letters Patent of the United States filed herewith.

WHEREAS, **THE INSTITUTE OF MICROELECTRONICS OF CHINESE ACADEMY OF SCIENCES**, a corporation having a principal place of business at **No. 3 Bei-Tu-Cheng West Road, Chaoyang District, Beijing, 100029, China** (hereinafter referred to as the "Assignee"), is desirous of acquiring the entire right, title and interest in and to said inventions and applications for Letters Patent of the United States, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon:

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, said Assignors have sold, assigned, transferred and set over, and by these presents do sell, assign, transfer and set over, unto said Assignee, its successors, legal representatives and assigns, Assignor's interest in the entire right, title and interest in and to the above-mentioned inventions, application for Letters Patent, and any and all Letters Patent or Patents in the United States of America and all foreign countries which may be granted therefor and thereon, and in and to any and all divisions, continuations, and continuations-in-part of said application, or reissues or extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by said Assignee, for its own use and behalf and the use and behalf of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted, as fully and entirely as the same would have been held and enjoyed by the Assignor, had this sale and assignment not been made; and

FOR THE SAME CONSIDERATION, said Assignors hereby covenant and agree to and

with said Assignee, its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, said Assignors are the lawful owner of the entire right, title and interest in and to said invention and the application for Letters Patent above mentioned, and that the same is unencumbered and that said Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth.; and

FOR THE SAME CONSIDERATION, said Assignors hereby covenant and agree to and with said Assignee, its successors, legal representatives and assigns, that said Assignors will, whenever counsel of said Assignee, or the counsel of its successors, legal representatives and assigns, shall advise that any proceeding in connection with said inventions, or said application for Letters Patent, or any proceeding in connection with Letters Patent for said inventions in any country, including interference proceedings, is lawful and desirable, or that any division, continuation or continuation-in-part of any application for Letters Patent, or any reissue or extension of any Letters Patent, to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of Letters Patent for said inventions, without charge to said Assignee, its successors, legal representatives and assigns, but at the cost and expense of said Assignee, its successors, legal representatives and assigns.

IN WITNESS WHEREOF, Assignors have thus set their hands on the date below written.

Date: 2018-01-11

Signature: 吕杭炳

Hangbing LV

Date: 2018-01-11

Signature: 刘明

Ming LIU

Date: 2018-01-11

Signature: 刘琦

Qi LIU

Date: 2018-01-11

Signature: 龙世兵

Shibing LONG