505015591 07/23/2018

PATENT ASSIGNMENT COVER SHEET

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| NATURE OF CONVEYANCE: | ASSIGNMENT |

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|--------------------|----------------|
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| YOSHIHISA HORIKAWA | 05/22/2018 |
| SHUNSUKE FUKAMI | 05/21/2018 |
| SHOJI IKEDA | 05/21/2018 |
| FUMIHIRO MATSUKURA | 05/21/2018 |
| HIDEO OHNO | 05/25/2018 |
| TETSUO ENDOH | 06/04/2018 |
| HIROAKI HONJO | 05/21/2018 |

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PROPERTY NUMBERS Total: 1

| Property Type | Number |
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| Application Number: | 15776902 |

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PATENT 505015591 REEL: 046428 FRAME: 0203

| DATE SIGNED: 07/23/2018 | |
|--------------------------------|--|
| Total Attachments: 7 | |
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PATENT REEL: 046428 FRAME: 0204

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Declaration and Assignment for Utility or Design Patent Application

The title of this invention is:

MAGNETIC TUNNEL JUNCTION FLEMENT AND MAGNETIC MEMORY

| | PAGNETO TOTALE SUNCTION ELEMENT AND PAGNETO MEMORI | |
|----|--|--|
| I. | Declaration | |
| | As a below named inventor, I/we hereby declare that this declaration is directed to: | |
| | () the attached application, | |
| | OR | |
| | (X) United States application or PCT international application number PCT/JP2016/084372 filed on November 18, 2016 and was amended on (MM/DD/YYYY) ———————————————————————————————————— | |
| | The above-identified application was made or authorized to be made by me. | |

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

II. Assignment

(X) Check this box to assign this invention.

FOR VALUE RECEIVED, the receipt of which is hereby acknowledged, the below named inventor or inventors (hereinafter called "ASSIGNOR") hereby assigns, transfers, and sets over to:

TOHOKU UNIVERSITY 2-1-1, Katahira, Aoba-ku, Sendai-shi, Miyagi 980-8577 Japan

(hereinafter called "ASSIGNEE"), the full and exclusive right, title, and interest in and to the above-named invention and all rights privileges under any Letters Patent that may be granted thereon, including all rights, if any, to sue for past infringement.

PATENT

REEL: 046428 FRAME: 0205

ASSIGNOR also assigns all rights, titles, and interests in and to said invention in all foreign countries, and all applications for Patent which may evolve therefrom, including the right to claim International Convention priority.

The ASSIGNOR agrees without charge to said ASSIGNEE but at its expense (a) to execute (i) all necessary papers to be used in connection with the above-identified application and any additional, continuing, or divisional applications, as the ASSIGNEE may deem necessary or expedient, (ii) all papers in connection with any other legal or quasi-legal proceedings relating to the above-identified application or any additional, continuing, or divisional application thereof; (b) to cooperate with ASSIGNEE in every way possible in obtaining evidence and going forward in any such proceedings; and (c) to perform all other affirmative acts which may be necessary or desirable to obtain a grant of a valid patent.

ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks of the United States to issue any and all Letters Patent that may be granted upon the above-identified application or any additional, continuing or divisional applications thereof to the ASSIGNEE, its successors and assigns.

ASSIGNOR hereby covenants and warrants that he or she has full right to convey the entire right, title and interest by this instrument, free of any encumbrances and that no other agreement has been or will be executed in conflict herewith.

ASSIGNOR hereby grants to the law firm of GREER, BURNS & CRAIN, LTD. of Chicago, Illinois, authority and power to insert on this instrument any further identification which may be necessary or desirable for purposes of recordation in the United States Patent and Trademark Office or a Patent Office of any foreign country.

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