

IEEE TRANSACTIONS ON MAGNETICS

A PUBLICATION OF THE IEEE MAGNETICS SOCIETY

JULY 2021

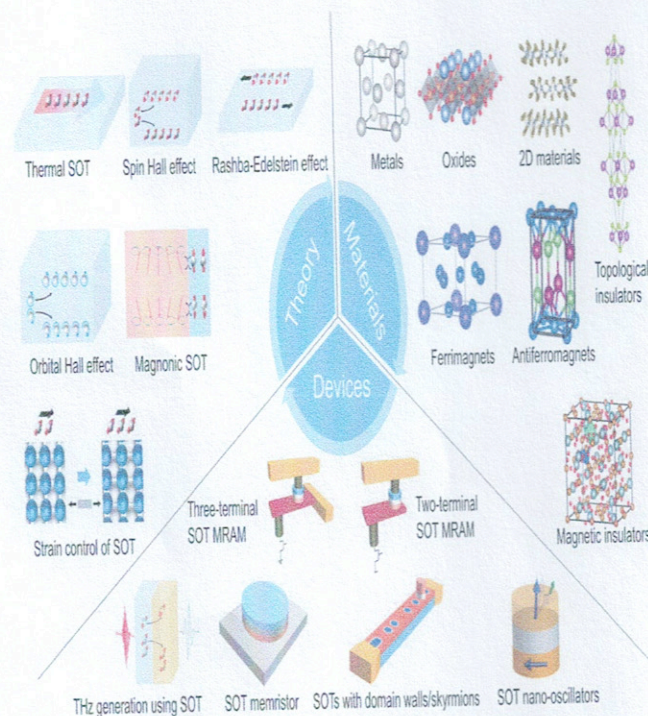
VOLUME 57

NUMBER 7

IEMGAQ

(ISSN 0018-9464)

PART II OF TWO PARTS



Overview of the Roadmap of Spin-Orbit Torques. From the paper, "Roadmap of Spin-Orbit Torques," by Q. Shao, P. Li, L. Liu, H. Yang, S. Fukami, A. Razavi, H. Wu, K. Wang, F. Freimuth, Y. Mokrousov, M. D. Stiles, S. Emori, A. Hoffmann, J. Åkerman, K. Roy, J.-P. Wang, S.-H. Yang, K. Garello, and W. Zhang, Art. no. 800439.

All

ADVANCED SEARCH

Journals & Magazines > IEEE Transactions on Magnetics > Volume: 57 Issue: 7

Rapid Fabrication of 2-D Magnetic Microstructures by Laser Direct Writing (LDW)

Publisher: IEEE

Cite This

PDF

Alaa Alasadi ; F. Claeysens ; D. A. Allwood **All Authors**

1

Cites in Paper

197

Full Text Views

Abstract

Document Sections

- I. Introduction
- II. Experimental
- III. Results and Discussion
- IV. Conclusion

Authors

Figures

References

Citations

Keywords

Metrics

Abstract:

A 2-D permalloy (Ni81Fe19) microstructures have been patterned using laser direct writing (LDW). The magnetic structures were designed and fabricated in a single-step process using scanning stage system based on A3200 software from a thin film. This process was implemented under atmospheric conditions and room temperature by removing unwanted areas of thin film by laser. The 2-D magnetic structures included: nanowire array. These elements exhibited shape-sensitive magnetic behavior with the increase in shape aspect ratio. The average fabrication time per element was 15–120 min at the scan speed was varied between 5–20 $\mu\text{m/s}$, and a laser repetition rate of 6 kHz. This demonstration of flexibility and speed of laser direct write processing being applied to magnetic microstructures may assist in prototyping and rapid manufacture of devices such as sensors and magnetic wires for interactions with biological cells..

Published in: [IEEE Transactions on Magnetics](#) (Volume: 57 , Issue: 7, July 2021)

Article Sequence Number: 2300306

DOI: [10.1109/TMAG.2021.3078474](#)

Date of Publication: 10 May 2021

Publisher: IEEE

ISSN Information:

Funding Agency:

Sign in to Continue Reading

Authors

Figures

References

Citations

Keywords

More Like This

[Magnetic thin-film magnetometers for magnetic-field measurement](#)

IEEE Transactions on Magnetics
Published: 1972

[Comparison of Synthetic Antiferromagnets and Hard Ferromagnets as Reference Layer in Magnetic Tunnel Junctions With Perpendicular Magnetic Anisotropy](#)

IEEE Magnetics Letters
Published: 2010

Show More