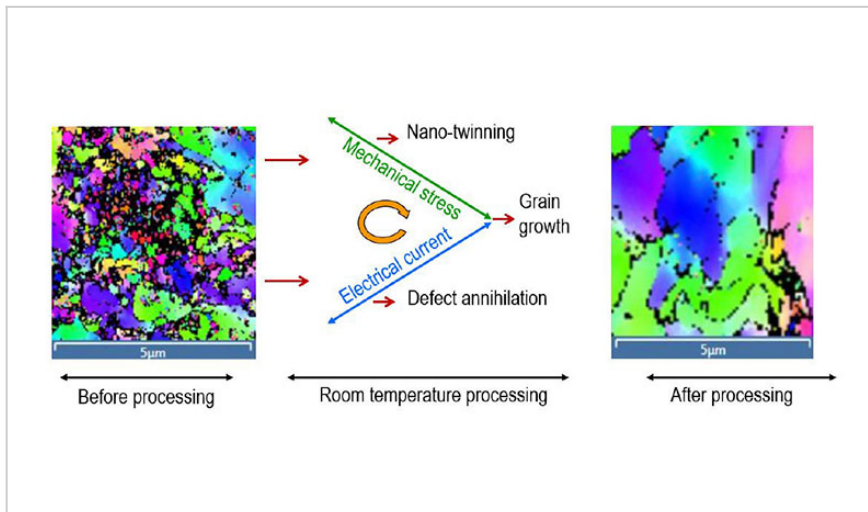


Room Temperature Processing of Electrically Conducting Materials

ID# 2018-4801



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Schematic of the invention

Technology Summary

The present technology is a series of energy efficient metallic material processing techniques that are performed at room temperature, with a time scale of merely hours. The invention produces superior microstructures that makes metals and alloys strong, tough, and defect free. Improved microstructures are obtained by using an electrical current instead of high temperatures. Accordingly, the technique allows for low energy processing that gives improved metallic properties compared to conventional heat treatment methods for metals and alloys.

Application & Market Utility

This technology is particularly relevant to sheet metal companies who produce high quality materials or seek greater product efficiency. Furthermore, the present invention can also be used for annealing thin, cheap films to remove defects in conductive materials including semiconductors. Inventors have applied their metallic materials processing technology on different metals and were successful in all the cases. The specimens were small scale, 50 micrometers thick.

Next Steps

Inventors are in the process of scaling up their experiments by applying their invention on metals beyond a thickness of a few micrometers. Samples and experimental findings are available to share with prospective licensees.

TECHNOLOGY READINESS LEVEL

1-3

Seeking

Investment | Licensing | Research

Keywords

- metal processing
- metal annealing
- metal hardening
- metal toughening

Researchers

Aman Haque

Professor of Mechanical and Nuclear Engineering

[Online Bio](#)

Zahabul Islam

Graduate Student

Originating College

College of Engineering

Office of Technology Management Contact

Rokita, Joseph
jjr152@psu.edu
814-863-6336



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