AEGIS TECHNOLOGY, INC.

Case Study
Research and Development in Nanomaterials for Coatings

CUSTOMER: U.S. Department of Defense (DoD)
CONTRACT #: W911QX-08-C-0081
PROJECT NAME: SBIR Project, "High Temperature Electrically Insulating Coating for Magnet Wires"
PROJECT DURATION: 2008-2009

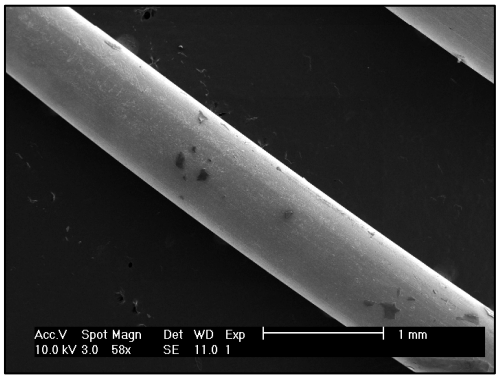
OVERVIEW

The US Department of Defense solicited a SBIR/STTR request for proposal (RFP) for new types of electrically insulating coatings for copper magnet wires. These copper magnet wires are used in power conversion systems that operate under high power densities, high temperatures, and high frequencies. In this project, nanocoatings based on the pyrolysis of polyceramic precursors were used to coat copper magnet wires. These ceramic nanocoatings provide excellent electrical insulation, thermal performance, and flexibility. Aegis Technology was awarded the project in 2008 and successfully completed the project in 2009.

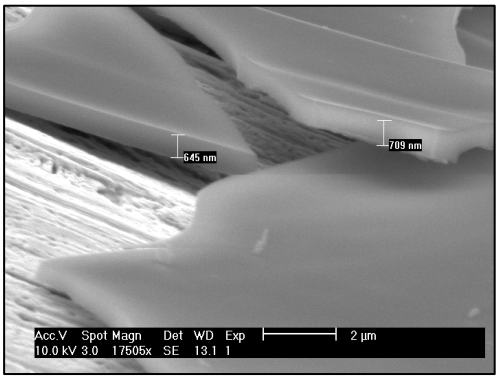
DELIVERABLES

Aegis Technology designed and delivered several nanocoated copper magnet wires. In the process, Aegis Technology conducted and/or developed:

- Processing
- Scanning Electron Microscope (SEM) Characterization
- Energy Dispersive X-Ray Spectroscopy (EDS) Analysis
- Electrical testing



(a)



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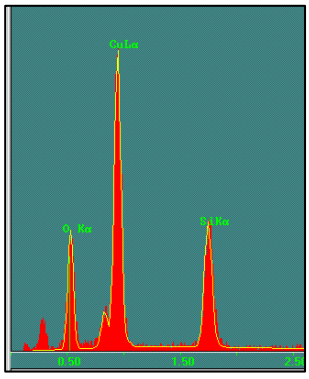

(c)

(d)

(a) SEM of ceramic nanocoating on copper magnet wire, (b) SEM characterization of nanocoating thickness (c) EDS analysis, (d) Coated copper magnet wire

CONTACT

For more information, please contact:
Dr. Timothy Lin, Technical Director, Aegis Technology Inc.
(714) 554-5511
timlin@aegistech.net
www.aegistech.net