

A Novel Method for Improving Flux-pinning and Possibly Achieving High Temperature Superconductivity (HTS) Filamentization

Applications:

- HTS wire/cable
- Fault current limiters
- HTS dynamic synchronous condensers

Advantages:

- Reduction in AC losses
- Improved flux-pinning

Contact:

Mark Reeves
Oak Ridge National Laboratory
P.O. Box 2008, Mail Stop 6196
Oak Ridge, TN 37831
(865)576.2577
reevesme@ornl.gov
www.ornl.gov/adm/partnerships/



Summary:

Technology Description

Many potential applications for High Temperature Superconductivity (HTS) wires involve operating the superconductor in the presence of ramped magnetic or oscillating magnetic fields, or require that the HTS wire carry alternating current. In the presence of time-varying magnetic fields or currents, there are a variety of mechanisms that give rise to energy dissipation, or "ac losses." The proposed invention is a novel method to achieve HTS wire filamentization which would help reduce ac losses.

Technology Application

Potentially any HTS application where HTS wire is employed can benefit from the proposed method, including power cables, fault-current limiters, transformers, MRI machines, and rotor coils.

Stage of Development: Conceptual

Patent Status: Patent pending

Licensing Status: Available for licensing