

T_CSUH Bi-Weekly Seminar

Texas Center for Superconductivity at the University of Houston

Matteo Alessandrini
Mechanical Engineering Department
at the University of Houston

Quench Propagation Analysis in M_gB₂ Superconducting Magnets

Friday, August 17, 2007

Room 102, University of Houston Science Center
12:00 noon – 1:00 p.m.

Abstract

Reliability and durability of high temperature superconducting magnets depends on our knowledge of their behavior during a quench. Simulation of quench propagation and voltage growth along composite M_gB₂ superconducting wires are presented by taking into account sharing current and temperature dependence of heat capacity, thermal conductivity and resistivity. A description will be given of our recently developed testing facility for quench propagation studies in M_gB₂ superconducting magnets. Finally some of the latest results on large bore solenoids will be presented and discussed.

Bio

Matteo Alessandrini is completing his PhD in materials engineering under the direction of Dr. Kamel Salama at the mechanical engineering department. Mr. Alessandrini received a Master in Space Studies in 2003 at the International Space University (Strasbourg, France) and a Master of Science degree in mechanical engineering from University of Bologna in 2004 (Italy). He completed his master's thesis at the Advanced Space propulsion Laboratory at NASA-JSC on the use of superconducting magnets in electrical space propulsion. He spent several months in US and Italian national laboratories working on superconducting magnets for high-energy-physics applications. His main research interest is the development and characterization of magnesium diboride superconducting wires and tapes and their use in superconducting large bore solenoids generating magnetic fields up to 2-3 tesla at 15-20 K.

Persons with disabilities who require special accommodations in attending this lecture should call (713) 743-8210 as soon as possible.



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