

T_cSAM Special Seminar

Texas Center for Superconductivity and Advanced Materials

Dr. V. Selvamanickam

SuperPower Inc.
Schenectady, NY



“Second-generation HTS Conductors”

Monday, May 2, 2005

Room 102, University of Houston Science Center
3:00 p.m. – 4:00 p.m.

Abstract

High temperature superconductors (HTS) are nearing their commercial viability with the projected roll out of second-generation conductors within one year. Second-generation HTS conductors promise to meet the price-performance characteristics needed for widespread use of HTS. SuperPower has been working on the scale up of second-generation HTS since its formation in 2000. This presentation would discuss the R&D over the last 5 years at SuperPower that has resulted in successful scale up of high-throughput processes to produce 100 m lengths of second-generation HTS conductors. The R&D has been an integration of basic materials science, equipment engineering, and process development. Such an integration was applied to all eight processing steps involved in fabrication of second-generation HTS conductors that include substrate polishing, buffer deposition, superconductor deposition, slitting, and copper stabilizer application. In addition, novel characterization techniques were applied to develop off-line and on-line quality control tools. The presentation would provide the latest development in the scale up R&D of second-generation HTS conductors as well as detail the remaining challenges for successful use of HTS in commercial applications

Bio

Dr. Selvamanickam is a Program Manager at SuperPower, a wholly-owned subsidiary of Intermagnetics General Corporation, where he has been since 1994. At SuperPower, he leads a team of 30 scientists, engineers and technicians, scaling up second-generation HTS technology to manufacturing. The second-generation HTS program of SuperPower led by Dr. Selvamanickam was ranked #1 in the nation in the 2003 and 2004 U.S. Department of Energy Annual Peer reviews held in Washington D.C. He was previously an Adjunct Professor at the New York State Center for Advanced Technology, University at Albany, State University of New York, Research Associate at Oak Ridge National Laboratory and a Post-doctoral fellow with the Texas Center for Superconductivity at the University of Houston. Dr. Selvamanickam has published 85 papers on high temperature superconductors, and authored eight U.S. patents and over 25 pending U.S. patents. In 1996, Dr. Selvamanickam received the Presidential Early Career Award from the White House. This award is the highest honor bestowed by the U.S. Government on outstanding scientists and engineers beginning their independent careers and Dr. Selvamanickam was the only award recipient among 60, who represented a U.S. industry. In 2005, he was voted by the Business Review journal as one of “40 under forty” business leaders in the New York Capital District region. Dr. Selvamanickam earned a Ph.D. degree in Materials Engineering in 1992 and an M.S. degree in Mechanical Engineering in 1988 from the University of Houston.

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