

T_cSUH Special Seminar

Texas Center for Superconductivity at the University of Houston

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“Development of Coated Conductors for Electric Power Applications”

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Room 102, University of Houston Science Center

12:00 Noon – 1:00 p.m.

Abstract

Commercial manufacture of high temperature superconducting wires with appropriate properties and costs for full implementation in electric power applications ultimately depends on overcoming several technical barriers. Many organizations across the world have demonstrated the great potential for production of coated conductor tapes in long lengths with appropriate superconducting properties for practical power usage. This review will summarize technical progress and remaining barriers with a focus on the Ion Beam Assisted Deposition (IBAD) approach to fabricating coated conductors. The most promising techniques for depositing practical superconducting films at high rates will also be presented. Current plans for using coated conductors in power prototype demonstrations will be summarized. Opportunities for collaborative research and development areas are also to be highlighted.

Bio

Dean Peterson received his Bachelors Degree from Monmouth College, Monmouth, Illinois and his Doctorate in Physical Chemistry from the University of Kansas. He joined Los Alamos National Laboratory in 1972 as a staff member developing thermoelectric generators for space exploration. He has conducted underpinning research on the thermodynamics, equilibrium phase behavior, and radiation damage of radioactive and other novel materials. He served in several Lab management positions including leader of a physical metallurgy group. He is currently leader of one of the three national Superconductivity Technology Centers. He was an editor for the American Society for Metals assessment of phase diagrams and authored a book on the phase behavior of actinide binary systems. Coauthor of over 200 journal articles, he holds nine patents, serves on editorial boards of two journals, and organized several workshops and symposia on high temperature superconductors.

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