

Dr. Joseph V. Minervini



Joseph Minervini is Division Head for Technology and Engineering in the Plasma Science and Fusion Center at MIT. He also holds an academic appointment as Senior Research Engineer in the Nuclear Science and Engineering Department where he teaches a course and supervises graduate student research. His present duties include spokesperson for the U.S. Magnetics Program organized under the Virtual Laboratory for Technology of the DOE Office of Fusion Energy Science (OFES).

Dr. Minervini has been active in the field of large-scale applications of superconductors and cryogenic systems for more than 30 years. His research interests include applied superconductivity, electromagnetics, cryogenic heat transfer, supercritical helium fluid dynamics and low temperature measurements. He has worked on magnet systems covering nearly every major application of large-scale superconductivity including fusion energy, magnetic levitation, energy storage, power generation, magnetic separation and high energy and nuclear physics as well as medical applications.

At present his research is focused in three main areas: development of high field, highly compact superconducting cyclotrons for applications in medicine, materials research, and national security; development of high current, high field HTS superconducting cables for fusion applications; and development of high power HTS cables for dc power distribution and microgrids.

He previously held positions at the Los Alamos National Laboratory, and at the NET Team, a European fusion research group sited at the Max-Planck-Institut for Plasmaphysik in Garching, Germany. He was a National Academy of Sciences-National Research Council Postdoctoral Research Associate at the former National Bureau of Standards (now NIST) in Boulder, Colorado. Before that, he was employed as a research engineer at the Magnetic Corporation of America.

He holds a B.S. Engineering degree from the U.S. Merchant Marine Academy, Kings Point, NY, and the Masters and Ph.D. degrees in Mechanical Engineering from the Massachusetts Institute of Technology. He serves as an International Advisory Editor for the journal Cryogenics. He previously served as a Member of the Cryogenic Engineering Conference Board from 2001-2007 - Program Chair (2005), Vice President (2005 -2007), Scholarship Committee (2003 – 2005), Elections Committee Chair (2005-2007). He is a member of the IEEE/NPSS Standing Committee on Fusion Technology. He served on the Board of the Applied Superconductivity Conference from 1996-2008, and was a member of the National Research Council Committee on Opportunities in High Magnetic Fields (COHMAG) from 2003-2005. Dr. Minervini is a member of the ASME, ANS, and IEEE and has over 100 publications in superconductivity, cryogenics, and fusion technology.