



Institute for Materials Science

UNCLASSIFIED

IMS Rapid Response 2017 * Recipient Guest Seminar



Dr. Russell Doerner
University of California, San Diego
Center for Energy Research

A Discussion on the Use of Tungsten as a Plasma-Facing Material for Fusion

Thursday, August 17, 2017

9:00 - 10:00

MSL Auditorium (TA-03 - Bldg 1698 - Room A103)

Abstract: For many years, tungsten has been regarded as the most promising plasma-facing material (PFM) for use in future burning plasma confinement devices. The virtues of tungsten as a PFM are well known and often quoted; high melting temperature, low erosion rate, low fuel retention, etc. In this presentation, both positive and negative consequences of using tungsten as a plasma facing material will be discussed. Results from experiments conducted in the PISCES linear plasma devices at the University of California, San Diego, which attempt to discover the physics governing the plasma interaction with tungsten, will be described. The implications of the underlying physics on the use of tungsten under the conditions expected in future fusion devices will then be discussed.

Bio: Dr. Doerner received degrees from Texas A&M University (B.S. in Physics, 1981) and the University of Wisconsin-Madison (M.S. in Materials Science, 1984 and Ph.D. in Electrical Engineering, 1988). Since that time he has performed experiments in the edge and scrape-off layer plasma of confinement machines throughout the world and has been involved in fundamental plasma-material interaction measurements conducted in various linear plasma devices. He presently leads the plasma-material interaction research program in the PISCES Laboratory at UCSD, and the US-EU Bilateral Collaboration on Mixed-Material Research for ITER.

To be in Dr. Doerner's Agenda, to participate in the Early Career Lunch, or for general information contact:
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