DISTINGUISHED LECTURER SEMINAR* ANNOUNCEMENT

The Development of Commercial Fusion Energy in the European Union (EU)

ITER, "Fast Track", "Ultra Fast Track"

GUENTER JANESCHITZ

Head of FZK Fusion Program & ITER Design Review Coordinator

Date: **JANUARY 18, 2008**
Time: **11:00 AM -12:00 PM**
Place: **6764 Boelter Hall (Rice Room)**
(Refreshments available at 10:30 a.m.)

Abstract: Humanity faces two major problems over the next few decades: climate change (CO2 production) and depletion of the finite resources, oil and natural gas. These two problems make the development and deployment of new non-fossil energy sources mandatory over the next several decades. While this time sounds long to the general public, it is actually dramatically short when considering the enormous amount of energy which has to be provided by new energy sources in the not so far future. A short overview of possible energy sources and their potential to contribute to the solutions of these problems is given, including fusion.

The present focus of worldwide fusion development, namely the ITER project, will be discussed. However, in order to arrive at a commercial fusion reactor, significant effort will be needed in parallel to ITER. An overview of what technologies, beyond the ones developed for ITER, are needed to build a fusion reactor will be given, including an explanation of the "Broader Approach" agreement between the EU and JA. In the final part of the talk the time schedule of the official EU policy for developing commercial fusion power is summarized. When comparing this schedule with that needed for new energy sources, it becomes clear that fusion would be somewhat late. Therefore a modified strategy is under discussion in the EU to accelerate the development of fusion and other new energy sources ("Ultra Fast Track"). A summary on this accelerated development plan and an outlook will be given.

Biosketch: Dr. Guenter Janeschitz is one of the most outstanding world leaders of fusion research and development.

He is currently Head of the Fusion Program at FZK, Karlsruhe, Germany and he leads the current world effort on ITER Design Review. He received his Ph.D. (1983) and Masters (1980) from the Technical University in Viena, Austria, with a thesis on structural analysis of super paramagnets by probing with polarised neutrons. Between 1983 and 1989 he worked at the Max Planck Institute for Plasma Physics in Garching, Germany (ASDEX Tokamak). In 1986 he was a member of a team which discovered the H-mode on the DIII-D machine at GA. From 1989 to 1993 Dr. Janeschitz worked on JET, the world's largest fusion experiment. In 1994 he was invited to join the ITER Joint Central Team in Garching and became responsible for the divertor design, its remote maintenance and boundary physics. In 1996 he was promoted to division head, and in 1998 was instrumental in helping to define the layout of the smaller ITER machine. In 2002 he moved to Karlsruhe and became head of the fusion technology program (~230 persons).

*For more seminar details, please contact Ms. Kyleen Bromley at Kyleen@fusion.ucla.edu (310-**825-2389**)*

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