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IAP-SEMINAR

EINLADUNG

- Termin: **Dienstag, 13.10.2009 um 16:00 Uhr**
Ort: **Technische Universität Wien,
Institut für Allgemeine Physik,
Seminarraum 134A, Turm B (gelbe Leitfarbe), 5. OG
1040 Wien, Wiedner Hauptstraße 8-10**
- Vortragender: **Dr. Thomas Schwarz-Selinger**
Max-Planck-Institut für Plasmaphysik, EURATOM ASSOCIATION,
Garching/D
- Thema: **Studying growth and erosion of amorphous hydrogenated carbon
thin films with low energy particle beams**

Kurzfassung

In Magnetic Confinement Fusion Research carbon is one candidate material for parts of the first wall, especially in areas in direct contact with the plasma. Besides many other material aspects, erosion of the first wall and retention of the fuel in the bulk material as well as in codeposited layers are important selection criteria for first wall materials. While erosion limits the lifetime of the components, fuel retention is important in terms of efficiency and safety. To understand present day experiments and to extrapolate to future fusion experiments microscopic understanding of the plasma–surface interaction processes involved are necessary. Particle-beam experiments can help to isolate microscopic mechanisms. Amorphous hydrogenated carbon thin films (a-C:H) were chosen as a model system for carbon films in direct contact with a hydrogen plasma. Results on the interaction of thermal atomic hydrogen, low energetic hydrogen and rare gas ions in the energy range 0.3eV – 800 eV with a-C:H will be presented to illustrate physical sputtering, chemical erosion, and chemical sputtering and experiments with atomic hydrogen and methyl radicals will be discussed to illustrate the synergistic growth of a-C:H.

*Alle interessierten Kolleginnen und Kollegen sind zu diesem Seminar
(45 min mit anschließender gemeinsamer Diskussion) herzlich eingeladen.*

*F. Aumayr e.h.
(Seminar-Chairperson)*

*H. Störi e.h.
(LVA-Leiter)*