*JOHANNES-KEPLER-UNIVERSITÄT LINZ*

Zentrum für Oberflächen- und Nanoanalytik

*Physikkolloquium*


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# Properties of Hydrogen in Semiconductors


The most abundant and simplest element in the universe is hydrogen. It accounts for about 75 % of the baryonic matter. On Earth hydrogen is commonly found in great quantities in combination with other elements. Examples are organic molecules and water. For semiconductors hydrogen can be utilized as an efficient atom that can passivate unsaturated bonds, which paved the way for large area thin-film displays based on amorphous and polycrystalline silicon. However, the properties of hydrogen in semiconductors extend well beyond the passivation of defects.
In this presentation some key properties of hydrogen in semiconductors will be discussed, such as defect passivation, the generation of defects, hydrogen doping, and the hydrogen density-of-states. Special attention will be given to the intentional and unintentional incorporation of hydrogen in solids.


**Date: 8th of November 2023** **Time: 15:30 a.m.** **Room: HS8**