JOHANNES KEPLER UNIVERSITÄT LINZ

**P H Y S I K K O L L O Q U I U M**

Fachbereich für Physik

*Im Rahmen des Physikkolloquiums spricht*


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über

# Ion Irradiation of Surfaces and 2D-Materials


## Abstract:

The impact of highly charged ions onto a solid surface gives rise to processes like charge exchange, ion stopping and electronic excitations at the surface. Subsequently the large amount of deposited energy can lead to sputtering and the formation of individual nanostructures at the surface depending on the material's response to the ion impact. To pinpoint the energy deposition and it's time dependence experimentally we recently used freestanding two-dimensional materials like graphene as a target. By adjusting the ions' kinetic energy the interaction time with the 2D-solid can be controlled. Spectroscopic measurement of the ion after transmission allows the observation of a rapid charge capture and deexcitation process. Our studies not only give insight into the charge exchange and deexcitation sequence upon impact of a highly charged ion on a solid surface but in addition allow to investigate material properties under extreme conditions on a femtosecond time scale.


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