Einladung
zum
Physikalischen Kolloquium

Montag, 08.07.2013
16:15 Uhr in N24/H12

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In-situ Mechanical and Electrical Testing of Nanostructures
in the Electron Microscope

For the successful use of nanostructures in functional devices a fundamental understanding of their physical properties in relation to their structure is indispensable. In-situ electron microscopy techniques offer great opportunities for directly measuring physical properties of individual nanostructures and, at same time, studying their structure at high magnification thus enabling to establish structure-property relations at small length scales. In this presentation three examples will be given. First, mechanical testing of nanoscaled silica particles by in-situ nanoindentation in the TEM will be shown to be highly valuable for not only studying but also tailoring the elastic and plastic properties of this important glass material. Secondly, in-situ STM-TEM studies of the resistive switching of individual metalorganic nanowires with potential use in memory devices will be described and routes toward a direct correlation with local measurements of charge transfer will be discussed. Finally, in-situ SEM studies of electrical conductivity across Ag nanowire networks used as transparent electrodes in organic solar cells will be presented. Here, the great potential of using voltage contrast in SE imaging for studying charge transport across individual nanowire junctions will be highlighted.

Ab 15.45 Uhr Kaffee, Tee und Kekse vor dem Hörsaal H12

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