SFB 595 Deutsche Forschungsgemeinschaft DFG

Sonderforschungsbereich 595

Elektrische Ermüdung in Funktionswerkstoffen

TECHNISCHE UNIVERSITÄT DARMSTADT

Kolloquium im SOMMERSEMESTER 2011

08.06. 2011

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Microstructure Control in ZnO Varistors

ZnO ceramic varistors exhibit grossly non-linear I-V characteristics, making them valuable as protection devices in circuits and systems. Based on ZnO with typically five or more oxide additives they develop inhomogeneous microstructures, with back-to-back Schottly barriers at the grain boundaries, giving rise to the unique electrical characteristics.

The presentation will address (i) applications of ZnO varistors, (ii) processing routes for ZnO-based varistors and the control of microstructure by additives, (iii) techniques to investigate the microstructure and electrical properties and the grain scale as well at the bulk scale, and (iv) electrical properties, including aging, and the way microstructure can limit the electrical properties. The talk will end with an introduction to recent work on dielectrics using Atomic-Resolution High-Angle Dark-Field Scanning Transmission Electron Microscopy (HAADF-STEM), which is a powerful tool for investigating structure-chemistry relationships at the atom level. The technique is equally applicable to ZnO materials.

Die Vortrag findet um **16:15 Uhr** im Gebäude der Materialwissenschaften, Lichtwiese, Petersenstr. 23, **Raum 128,** statt.