

**Invitation to the talk *Local Electrical Properties of Microstructural Defects* of  
Dr. Hanna Bishara at the GAMM Student Chapter at TU Dortmund University**

Place: MB I - R165 (Seminar room, hybrid)  
Zoom Link: [Link](#)  
Meeting ID: 967 3333 6845  
Passcode: 749301

Date: Thursday, 2nd March 2022  
Time: 2:00 pm (14:00)

**Preliminary agenda**

*TOP 1:* Seminar talk by [Dr. Hanna Bishara](#) (see abstract below)

*TOP 2:* Discussion and Questions

*TOP 3:* Open Exchange

**Abstract**

Local Electrical Properties of Microstructural Defects

*Dr. Hanna Bishara - Tel Aviv University, Department of Materials Science and Engineering*

The impact of microstructural defects on the electrical properties of materials is generally captured as an accumulative effect of all the material's defects. Despite the different atomic and mesoscopic structures of defects, the impact of their structural characteristics on the resistivity is not yet understood. In this study, the resistivities of individual defect segments, having well-defined structures, are directly measured through novel high-resolution local electrical measurements in situ SEM. The talk will introduce the local resistivities of grain boundaries in pure and alloyed Cu, pores in metals, and dislocations in oxides. The electrical properties are correlated with the structural characteristics of the defects. Multiscale simulations are used to determine the global resistivity from the measured local defects' resistivities. The results paves the way for knowledge-based defect engineering of conductors, functional materials and internal interfaces.

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