## Characterization methodology for thin materials in the field of e-mobility

*Roman Norz, Florian Steinlehner*
*Lehrstuhl für Umformtechnik und Gießereiwesen, Technische Universität München (TUM)*

The shift from the combustion engine to e-mobility goes hand in hand with the use of new materials. Materials which are used for electrical engines, fuel cells or batteries often have thicknesses in the range of micrometers. These small thicknesses create new challenges in the sample preparation and testing procedures. In this presentation, the effects of different sample preparation techniques on the results of tensile and fatigue tests are discussed. Next to the macroscopic tests also effects on the microstructure are investigated by nanoindentation.

By employing advanced mechanical characterization techniques and sample preparation, researchers and engineers can optimize the design and selection of thin materials for e-mobility, leading to the development of lightweight, high-performance components that contribute to the advancement of sustainable transportation systems.