
MM 57: Invited Talk (Hauptvortrag): Ivanisenko

Time: Thursday 15:00–15:30

Location: H24

Invited Talk

MM 57.1 Thu 15:00 H24

Micro- and macroplastic behavior of nanocrystalline Pd-Ag alloy in temperature range between 4 and 300K — •YULIA

IVANISENKO — Institut für Nanotechnologie, Karlsruher Institut für Technologie, 76021 Karlsruhe, Germany

Nanocrystalline (nc) materials with the mean grain size as small as 15-30 nm demonstrate very peculiar mechanical behavior, for example, strong compression/tension asymmetry, extended elastic-to-plastic

transition (extended microplasticity stage), propensity to strain localization, stress-induced grain growth and abnormally high cryogenic strength. Taking nc Pd-Au alloy prepared by inert gas condensation method as example, these peculiarities were studied using various ex situ and in situ testing techniques including in situ SEM compression test, compression test in the temperature range between 4 - 300 K, instrumented high pressure torsion and synchrotron texture measurements. In this contribution, the overview of the obtained results will be given and discussed.