



Institute of Physics of the
Czech Academy of Sciences

SEMINAR

23. 09. 2021 at 14:00

Meeting Room 72C, Na Slovance 1999/2, Prague 8

Online Meeting Room: <https://webmeeting.fzu.cz/b/che-pwa-wuy>

Yuchen CHEN

Department of Functional Materials, Division of Condensed Matter Physics

Superelastic NiTi: Deformation within the plateau range & beyond yield point (Part 1 of 2, plateau range)

Plastic deformation in superelastic NiTi degrades functionality, cyclic stability in the plateau range. But it is intriguing to see that, when superelastic NiTi deforms beyond yield point, the plasticity does not actually impede the reversibility of superelastic NiTi, and moreover when deformed in plateau range at certain temperatures superelastic NiTi could manifest suspicious long plateau exceeding theoretical crystallographic strain limit. In order to unravel how plasticity proceeds in superelastic NiTi, NiTi with wide range of microstructures were created and tested under wide range of temperature. Speculations on deformation twinning in martensite, and $B2 \Rightarrow B19' \Rightarrow B2$ transformation were put forward based on resistivity investigation, synchrotron X-ray, DIC measurement, TEM observation.

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