



Institute of Physics of the  
Czech Academy of Sciences

**SEMINAR**

**7. 10. 2021 at 14:00**

**Meeting Room 117, Na Slovance 1999/2, Prague 8**

## **Yuchen CHEN**

Department of Functional Materials, Division of Condensed Matter Physics

### **Superelastic NiTi: Deformation beyond yield point**

In spite of large plastic deformation on macroscopic scale, superelastic NiTi wire is still capable of considerably large recoverable strain (e.g. 16ms wire deformed to 46% true strain at 20C, can still develop recoverable strain up to 13%). It was mysterious for those who believed that plastic deformation would destroy recoverability of superelastic NiTi. Thus, how plasticity proceeds in superelastic NiTi entered the collimator of this investigation, which zoomed into the recoverability, resistivity analysis, TEM observation of superelastic NiTi deformed around and beyond yield point. Mechanism of deformation twinning was deduced from experiments and observations to rationalize the recoverability of superelastic NiTi despite large plastic deformations.

This event is supported by ESIF and MEYS  
(Project **FZU researchers, technical and administrative staff mobility** – CZ.02.2.69/0.0/0.0/18\_053/0016627)



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education

