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Hysteresis Design of Magnetic Materials for Efficient Energy Conversion

Tuesday, 7 May 2024, 9:00 s.t., UDE, in Person and via Zoom

JProf. Dr. Luana Caron
Fakultät für Physik,
Universität Bielefeld

@UDE, Campus Duisburg,
MG 272 (in person)
and via Zoom
Meeting-ID: 225 349 6215
Kenncode: 0000

Microstructure design in transition metal-based magnetocaloric materials

Abstract:

Magnetic cooling, a solid-state refrigeration technology based on the magnetocaloric effect, has attracted significant attention in space cooling due to the high energy- efficiency and environmental friendliness. Transition metal-based magnetocaloric materials with the merit of low-cost have emerged as promising candidates for efficient magnetic refrigeration applications. In this presentation I explore how different microstructure manipulation techniques can be used to achieve improved mechanical stability and thermal conductivity in transiton metal based magnetocaloric materials.

About the speaker:

Luana Caron has a Bachelor and a Ph.D. in Physics from the State University of Campinas and has worked as a post doc researcher at the Reactor Institute Delft - Delft University of Technology, Angström Laboratory at Uppsala University and at the Max Planck Institute for Chemical Physics of Solids. Since April 2018, Luana Caron is a Junior Professor at Bielefeld University as part of the Joint Lab BiBer of Bielefeld University and Helmholtz Center Berlin. Her research aims at understanding the coupling between different degrees of freedom which give rise to phenomena such as the caloric and multicaloric effects, magnetoresistance, shape memory, etc, with the ultimate goal of engineering novel functional magnetic materials.