Im Rahmen des Physikkolloquiums spricht

Prof. Eduard Arzt

INM – Leibniz Institute for New Materials and Saarland University
Saarbrücken, Germany

über

Functional micropatterned surfaces – a sustainable materials paradigm

Abstract:
Inspired by biological evolution, the tailoring of surface microstructures has become a powerful materials paradigm: micropatterning of polymeric surfaces can produce various functions, ranging from controlled wetting and anti-icing to coloration and switchable adhesion enabling gripping of objects. By a combination of model experiments, theory and numerical simulation, we created an understanding of the immense architectural design space encompassing feature size, contact shape, and material parameters. Successful designs, implemented e.g. by Two-Photon Polymerization, have resulted in versatile and switchable gripping devices, enabling innovative robotic pick-and-place devices or delicate adhesives for skin and body organs. Designing with micropatterns - instead of chemistry - thus gives rise to non-toxic, resource-efficient, and energy-saving materials and systems.

Eduard Arzt is Professor for New Materials and Scientific Director of INM – Leibniz Institute for New Materials in Saarbrücken, a leading German research laboratory. Previously, he co-directed the Max Planck Institute for Metals Research in Stuttgart. Following a physics PhD from the University of Vienna, Austria, he held visiting positions at Cambridge University, Stanford University, MIT, and the University of California. He is the recipient, e.g., of the Leibniz Award, the Morris Cohen Award of TMS and several competitive European Research Council grants. He is member of several academies including, most recently, the US National Academy of Engineering. Arzt is editor-in-chief of the review journal Progress in Materials Science and co-founder of a recent deep tech start-up.

Zoom-Meeting beitreten:
https://jku.zoom.us/j/99821586360?pwd=WWo0dCtUSXdXSi9QcWU4STZreVVhZz09

Meeting-ID: 998 2158 6360
Passwort: 604404

Datum: Mi, 26.05.2021
Zeit: 17:15 Uhr
Ort: HS 8 / ZOOM-Meeting