ÚFE Ústav fotoniky a elektroniky
Akademie věd ČR

Zinc Oxide as the powerful Trinity: The Protection, Energy and a Mystery

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Hall of the Institute
(15:00 refreshment)

Introduction

Modern society is obsessed with finding "green" energy, but we usually look for it in giant dams or solar farms. I'd like to suggest we look a little closer to home. Look at our own skin and the clothes we are wearing. I invite you to join my upcoming talk where I'll discuss how we can turn everyday movement into a personal power plant.

The Highlights:

- The Sunscreen Connection: Why the Zinc Oxide (ZnO) in our beach bag is actually a piezoelectric powerhouse.
- Nanoscale Farming: How we "grow" perfectly aligned nanorods using cost-effective chemical baths.
- The "Green State" Mystery: Mastering the complex heat treatments and sintering processes that make or break energy yield.
- Wearable Tech: What if we don't even need a rigid substrate anymore, opening the door for power-generating fabrics.

Šárka Kučerová is a PhD candidate in Surface and Interface Physics at Charles University in Prague and the Institute of Photonics and Electronics of the Czech Academy of Sciences, where her research focuses on the preparation and characterization of semiconductor nanostructures, particularly ZnO nanostructures using electron and ion beam techniques. Her recent work centers on highly ordered semiconductor nanorod arrays and advanced microscopy methods, including TEM, SEM, AFM, and focused ion beam microscopy. During her doctoral studies, she also completed international research internships at National Yang Ming Chiao Tung University in Taiwan and KAIST in South Korea. Her work has been presented at several international conferences, including MSM-XXI in Cambridge and DRIP XVIII in Berlin.