



3rd International Conference on Nanomaterials Science and Mechanical Engineering

University of Aveiro, Portugal
July 7-10, 2020

Book of Abstracts



tema

university of aveiro
centre for mechanical technology and automation



9 July 2020

3 rd International Conference on Nanomaterials Science and Mechanical Engineering (online)					
9:00-9:45	<p>Auditorium 1</p> <p style="text-align: right;">Session: Nanotechnology CHAIRS: Dr. Duncan Paul Fagg, Dr. Igor Bdikin</p> <p>Plenary Lecture Prof. Dr. Nikolai Sobolev Ion beam modification of magnetic anisotropy, interlayer coupling and tunnel magnetoresistance in magnetic tunnel junctions <i>Physics Department & i3N, University of Aveiro, 3810-193 Aveiro, Portugal</i></p>				
9:45-10:30	<p>Plenary Lecture Prof. Dr. Binay Kumar Piezoelectric Nanoparticles Based Flexible Nanogenerators <i>Crystal Lab, Department of Physics & Astrophysics, University of Delhi, India</i></p>				
10:30-11:00	Coffee break				
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I11. Strontium titanate and zinc-oxide-based materials for high-temperature thermoelectric harvesting

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Gabriel Constantinescu¹, Sergii A. Sergiienko¹, Florinda M. Costa², Jorge R. Frade¹,
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Broad societal needs have focused increased attention to providing a sustainable energy supply to the population, based on technologies with minimal environmental impact and reduced fossil fuels usage. One solution is to improve energy conversion efficiency in key consuming sectors. Since most of the energy (60-70%) used worldwide is discharged as waste heat, "green" thermoelectric (TE) conversion has received considerable attention due to its intrinsic simplicity, employing no moving parts, silent operation, excellent scalability and reliability, and self-sufficiency to enable mobile or remote applications. In some energy-conversion scenarios, the cost and thermal stability requirements may dominate over efficiency issues, making abundant, high-temperature-stable and low-toxic oxides an interesting alternative TE material. This talk will feature some oxide-specific approaches towards tuning the thermoelectric performance in strontium titanate and zinc-oxide-based materials, including defects engineering and in-situ induced nanostructuring.