

FEMS EUROMAT 23

03 - 07 Sep 2023 (Frankfurt am Main)

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FEMS EUROMAT is the most important international congress in materials science and technology in Europe. It continues a successful congress series promoting the transfer of knowledge and the exchange of experience between academia and industry. **Submission deadline: 31 January 2023**

Area A: Functional Materials

A06: Smart Energy Materials and Devices

Smart Energy Materials and Devices are materials that exhibit tunable and/or tailored physical properties that save, generate or transmit energy in response to, e.g., external stimuli, being either temperature, pressure, solar light, x-rays, infrared light, magnetic and electric fields, ions, or ambient gases. Examples include chromogenic, thermoelectric, passive cooling, sensors, and transparent conducting materials. These materials are essential for the imminent paradigm shift in energy production and management, as well as many technical applications. They find applications in buildings and automobile industry by controlling light and heat transfer through windows, in displays and optoelectronics, medical technologies, sensor technology, in aerospace engineering, and many others. Current research aims to further increase the impact of these materials and devices by exploring new materials and material combinations, new synthesis and growth methodologies, nanostructuring, bandgap, and Fermi-level engineering, etc. This symposium will give an overview of the state-of-the-art and most recent scientific and technical progress, and the intention is to make it an interdisciplinary forum for the exchange of ideas and research advances. Key areas, current challenges and opportunities will be highlighted.

Hot topics to be covered by the symposium:

- Chromogenic (electrochromic, thermochromic, photochromic, gasochromic, magnetochromic, piezochromic) devices;
- Transparent Conducting Materials
- Passive cooling materials and devices (sky cooling, selective reflecting coatings, etc.)
- Building-integrated solar energy materials and devices
- Smart energy-saving materials and devices
- Smart photonic materials and devices
- Window-integrated solar-powered chromogenic devices;
- Organic, inorganic, and hybrid materials;
- Nanomaterial-organic/inorganic composites;
- Theoretical and experimental methods of research;
- Up-scaling and commercialization.

Symposium Organizer



Dr. Vassilios Binas
FORTH - Hellas



Dr. Smagul Karazhanov
Institute for Energy Technology, Kjeller



Dr. Aline Rougier
University of Bordeaux, CNRS



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