SPINSWITCH: Multifunctional Spin Crossover Materials

Objective: This project deals with an exchange programme of seven research teams with the aim to establish and consolidate a network for the design of innovative multifunctional materials based upon iron(II) spin crossover complexes: their synthesis, magnetic and spectroscopic studies, investigations on their crystalline, liquid crystalline and morphological structures, pressure eects on spin crossover properties and, particularly, their implementation into pressure sensors.

The synthetic part of this project aims to access novel types of crystalline and liquid crystalline spin crossover complexes, hybrid luminescent materials, photo-switchable liquid crystalline compounds, composites and nano-objects of original morphologies and transition characteristics. These switchable materials will become a matter of dierent experiments under pressure: magnetic and Mossbauer measurements under hydrostatic pressure and optical experiments in a gas pressure cell.

This will allow to reach an important impact on the synthesis of new bistable materials, on their behaviour under pressure, and to make them an active part of dierent pressure sensors. The academic participants involved in this work have collaborated on joint projects and have co-authored several scientific papers. The two industrial institutions have a recognized expertise in organic and material synthesis, commercialization, as well possessing experience on elaboration of spin transition materials.

The establishment of this joint exchange programme will promote and strengthen the complementarity of the participants and will stimulate cross-fertilization, thus forming an excellent centre of synergy in research, innovation and technology in the area of functional materials. This network oers a complete training in the synthesis and characterization of new spin crossover materials for various applications.

Funding scheme: MSCA-RISE - Marie Sk?odowska-Curie Research and Innovation Sta Exchange (RISE)

Coordinated by: UNIVERSITATEA STEFAN CEL MARE DIN SUCEAVA, Romania

Moldovan partner: SRL POLIVALENT-95

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