Symposium K : i-Caloric Materials and Applications

Scope of the Symposium

This symposium is focused on materials that present at least one of the *i*-caloric effects and, in addition, have emerging technological applications. The general definition of *i*-caloric effect can be stated as a thermal response of the material when exposed to a change of external perturbations (where *i* stands for intensive thermodynamic variable, including external fields). The nature of the response depends on the thermodynamic process performed on the material. The effects are characterized by a temperature change, when the material undergoes an adiabatic process; or an entropy change, when the material undergoes an isothermal process. Depending on the nature of this external perturbation (magnetic field, electric field or stress), *i*-caloric effects can be categorized as magnetocaloric effect, electrocaloric effect and mechanocaloric effect. Mechanocaloric effect can still be divided in elastocaloric effect, driven by uniaxial stress; barocaloric effect, driven by isotropic stress variations; and torsiocaloric effect, driven by pure shear stress of torsion. It is worth mentioning that a few materials present more than one *i*-caloric effect and are called multicaloric materials.

Abstracts will be solicited in (but not limited to) the following areas

- *Materials: theory*
- *Materials: experimental*
- *Devices: theory, design*
- *Devices: experimental*
- *Other experimental setups*
- *Novel effects and applications*

Tentative list of invited speakers (To be confirmed)

Victorino Franco (*Universidad de Sevilla*) **Paulo Trevizoli** (*Universidade Federal de Minas Gerais*) .

Symposium Organizers

Alexandre Magnus Gomes Carvalho (*CNPEM*) **Mario de Souza Reis Junior** (*UFF*) **Jader R. Barbosa Jr.** (*UFSC*) **Vladimir I. Zverev** (*M. V. Lomonosov Moscow State University*) .