

Special Issue

Advances in Phase Change Materials: Characterization, Design and Applications

Message from the Guest Editor

Phase change phenomena exist in many natural materials, such as metals, polymers and oxides, etc. Phase change materials have been widely researched in terms of energy storage, thermal management, smart building, and information storage. Especially in the intelligent photonics fields, various new types of photonic devices have materialized by taking advantage of phase change materials in rapid reversible switching, large variation range of optical dielectric function, and nonvolatile and long-term retention. These devices usually possess reprogrammable, reconfigurable, rewriteable, tunable, and switchable properties. This volume aims to collect the latest developments for scientific and technological advances of the PCMs so as to provide an exhaustive overview of the state of the art and future trends. Topics will include but not be limited to:

- Synthesis and doping engineering;
- Calculation and modeling of transition dynamics;
- New structures, e.g., super-lattice and heterostructure;
- Fundamental and device physics;
- Micro- and nanoscale phase-change devices;
- Metal-insulator transition in VO₂;
- Phase-change memory.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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