Special Issue

In-Situ Preparation of High-Performance Materials

Message from the Guest Editor

Compared with conventional ex-situ processing techniques, in-situ processing techniques exhibit numerous distinct advantages, including energy and cost saving, improved phase compatibility, improved phase dispersion/distribution, simplified production processes, and reduced production time, as well as enhanced materials properties and performance. Thanks to these, in situ processing techniques have been, and are still being, used commonly and extensively to prepare a range of novel materials (from polymer based to metal based to ceramic based) that are highly demanded by important industrial sectors. Main topics of this Special Issue include but are not limited to the following:

- In situ synthesis of high-entropy materials and high-activity catalysts;
- In situ formation of functional coatings/films/membranes and barrier layers;
- In situ phase reinforcement of composites;
- Template synthesis of novel materials;
- Reaction bonded composites;
- In situ preparation of core–shell particles/grains;
- In situ surface engineering;
- In situ design strategy for self-healing materials;
- Simulation/modelling of in situ reaction processes.

Guest Editor

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Deadline for manuscript submissions

closed (20 May 2022)

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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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