

The European Physical Journal

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Call for papers

Applied Physics

Special Issue on Amorphous alloys and multiscale materials:

Applied In Energy Saving And Sustainable Energy

From:
Papers on the application of genetic algorithm in power transformers based on the sequential quadratic programming-genetic algorithm adopting acoustic emission techniques
by H.-L. Liu and H.-D. Liu

Guest Editors

- *Prof. Zhao Zhankui, Changchun University of Technology, China*
- *A/Prof. Wang Hongli, Changchun University of Technology, China*
- *Dr. Cheuk-Wai Tai, Stockholm University, Sweden*

edp sciences

Background

Amorphous alloys have superior mechanical, electrical, corrosion resistance and soft magnetic properties which can be very different from those of the corresponding crystalline counterparts. The relationship between the structures and properties of materials is studied at the multi-scale level. The tremendous growth of interest for **multiscale materials** comes from the fact that their chemical and physical properties can be tuned by varying their compositions and structures. This makes amorphous alloys and multiscale materials suitable for a wealth of

technological applications, such as electromagnetic devices, fuel cells and heterogeneous catalysts, light emitting materials, etc.

Aim and Scope of the Themed Issue

The aim of this Special Issue on the amorphous alloys and multiscale materials is to bring together information on the recent progress, novel technologies, advanced equipment described in our works on the design and development of advanced materials and provide guidelines/benchmarks for further research in energy saving and sustainable energy areas. Different alloy materials can be prepared by designing appropriate atomic structures or further using them to construct nano and micro structures. Composites, intermetallics, and nanomaterials as well as functional materials will be also included. Examples of some of the recent advances relating to the design, properties, and processing of advanced amorphous alloys and multiscale materials including novel material processing techniques, microstructural characterization, computer simulation, and advanced equipment. Conventional and nonconventional processes relating to spark plasma sintering, local surface plasmon resonance, surface modification, and the additive/subtractive manufacturing of high-performance alloys/metals are also included.

Scope of papers that will be considered for publication in this Special Issue first covers the most exciting current research on the amorphous alloys and multiscale materials structures and second, extensively document the effects of material's chemical and physical properties in the energy saving and sustainable energy applications. Specific areas of interest also include amorphous alloy based composites and nanocrystalline materials; high performance magnetic amorphous alloy; engineering application of amorphous alloys; catalytic / electrocatalytic hydrogen production materials; functional properties of high entropy alloys; up-conversion luminescent materials; olefin polymerization catalysts; related synthesis and processing techniques; first principles and molecular dynamics; physical/chemical property characterization, and other relevant phenomena.

Submissions

All relevant papers will be carefully considered, reviewed by a distinguished team of international experts, and published in accordance to the [Journal's standard policies](#). Full research papers and comprehensive review articles can be submitted online via the journal's [submission and peer review site](#).

Submission deadline – June 1st 2022

Charges

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2. For papers that have not chosen the Open Access Option (those papers will be read only by subscribers), there are **no publication charges**.
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