Special Issue

Artificial Intelligence Instruments Applied in Materials Science

Message from the Guest Editor

Artificial Intelligence (AI) tools are proving useful in various fields, the best known techniques being neural networks, for regression and classification problems, and evolutionary algorithms, for optimization problems. Modelling with neural networks is recommended in situations where the phenomenology of a process is not precisely known, but input–output data are available, reflecting the dependence between variables. Evolutionary algorithms offer a wide range of methods that can be applied to optimize processes or models developed for them. Another important aspect is related to the possibility of combining these techniques in hybrid soft-computing configurations that integrate the advantages of the individual techniques. In the field of materials modelling and optimization, AI techniques may allow both materials synthesis and the study of structure–properties relationships. Topics of interest include, but are not limited to modelling with neural networks, optimization with evolutionary algorithms, hybrid AI techniques, and other AI activities and techniques applied in the field of materials

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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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