Special Issue

Advances in Quantum Science: Quantum Computing, Quantum Sensors and Quantum Communications

Message from the Guest Editors

Quantum technologies are deeply rooted in suitably tailored physical substrates. The reason for this can be either the direct encoding of information in quantum states, as happens in quantum computers and communications, or the coupling of quantum states with macroscopic equipment, as happens for quantum sensors and quantum metrology. Then, the appropriate choice and the engineering of a suitable material can make the difference in driving quantum science to quantum technologies. Materials for quantum science range from quantum computing (semiconductor host of quantum dots, superconductors, defects in semiconductors, etc.) and quantum communications (single-photon sources and detectors) to quantum metrology (absolute photon counters) and quantum sensors (solid-state spins, superconductors and SQUIDs, optomechanics, etc.). This Special Issue covers both the development of materials to boost quantum technologies, and quantum technologies to empower the search for and refinement of materials. It is my pleasure to invite you to submit a manuscript for this Special Issue. Full papers, communications, and reviews are all welcome.

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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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