

The Journal is now firmly established as the leading source of primary communication for scientists investigating the structure and properties of all engineering materials. The Journal of Materials Science publishes reviews and full-length papers recording original research results on, or techniques for, studying the relationship between structure, properties, and uses of materials. Materials include metals, ceramics, glasses, polymers, energy materials, electrical materials, composite materials, fibers, nanostructured materials, nanocomposites, and biological and biomedical materials. The Journal covers the science of advanced ceramic materials. The journal encourages contributions that demonstrate how an understanding of the basic chemical and physical phenomena may direct materials design and stimulate ideas for new or improved processing techniques, in order to obtain materials with desired structural features and properties. The Journal covers oxide and non-oxide ceramics, functional glasses, glass ceramics, amorphous inorganic non-metallic materials (and their combinations with metal and organic materials), in the form of particulates, dense or porous bodies, thin/thick films and laminated, graded and composite structures. Process related topics such as ceramic-ceramic joints or joining ceramics with dissimilar materials, as well as surface finishing and conditioning are also covered. Besides traditional processing techniques, manufacturing routes of interest include innovative procedures benefiting from externally applied stresses, electromagnetic fields and energetic beams, as well as top-down and self-assembly nanotechnology approaches. In addition, the journal welcomes submissions on bio-inspired and bio-enabled materials designs, experimentally validated multi scale modelling and simulation for materials design, and the use of the most advanced chemical and physical characterization techniques of structure, properties and behaviour. Technologically relevant low-dimensional systems are a particular focus of Ceramics International. These include 0, 1 and 2-D nanomaterials (also covering CNTs, graphene and related materials, and diamond-like carbons), their nanocomposites, as well as nano-hybrids and hierarchical multifunctional nanostructures that might integrate molecular, biological and electronic components. The Journal is particularly keen to attract papers which deal with fundamental scientific aspects that are relevant to the development of the whole range of advanced ceramics including e.g. phase equilibria and transformations, reactivity, transport processes, thermodynamic and electronic properties, as well as quantum effects in low dimensional materials. Priority materials and areas of interest are: * Advanced ceramics and composites for civil, military and industrial applications at room and moderate temperatures– High and ultrahigh temperature structural ceramics and composites for use in extreme environments; * Electroceramics such as dielectric and microwave ceramics, ferroelectrics, piezoelectrics, pyroelectrics, thermoelectrics, ferroelastics; magnetic, multiferroic, semiconducting and fast ion-conducting ceramics; high T_c superconductors, topological insulators; * Optical ceramics including luminescent and chromogenic materials, transparent conducting and semiconducting ceramics, electro-optical, magneto-optical and laser materials, inorganic optical fibers, plasmonic structures and electromagnetic metamaterials; * Ceramics for nuclear fission, fusion and nuclear waste management technologies; * Bioinert and bioactive ceramics for the full range of medical applications, including functional nanoparticles, composite materials and hybrid hierarchical nanostructures for tissue engineering, delivery systems, bio imaging and neural interfaces. The Journal is among the top sources for materials science research,

providing scientists, engineers, and students with critically assessed, original research for over 100 years. One of the top journals in the materials science category, the journal publishes 12 issues per year filled with top quality research that spans the diverse segments of science. Topics cover a broad range including: Glass science, crystal chemistry, microscopy and microstructure, bioceramic science, powder processing and colloidal science. The Journal contains records of original research that provide insight into or describe the science of materials and composites based on ceramics and glasses. These papers include reports on discovery, characterization, and analysis of new inorganic, non-metallic materials; synthesis methods; phase relationships; processing approaches; microstructure-property relationships; and functionalities. Of great interest are works that support understanding founded on fundamental principles using experimental, theoretical, or computational methods or combinations of those approaches. All the published papers must be of enduring value and relevant to the science or composites based on those materials. Papers on fundamental materials technology are welcome including those in the following areas:

- * Enabling materials for grand challenges – Advanced energy generation, harvesting, and storage – Environmental protection and remediation – Extreme operating environments – Biomedical applications including tissue replacement, wound healing, and drug delivery
- Efficient transportation and green infrastructure – Information transmission, storage, display, and processing
- o Materials design, selection, synthesis and processing methods – Rational design of functional ceramics and glasses guided by predictive modeling – Functionalizing defects and/or interfaces for unprecedented properties – Creating free-standing, low-dimensional materials – Reducing time and processing steps, including net-shape and self-assembly methods – Reducing temperature, energy, and environmental footprint
- * Characterization of compositions, structures, defects, and properties along with new methods – Multiple length scales from atoms to nanoparticles to microstructure to macrostructure – Behavior in 0, 1, 2, and 3-dimensional materials and at material interfaces – Temperature extremes – Pressure, electrical fields, and other driving forces – Radiation exposure and damage responses – Time evolution – Combinations of length, dimension, driving forces, properties, and/or time – Advanced in-situ and/or in-operando measurement capabilities – Archeometry and Analysis of Art and Materials of Cultural Heritage
- * Mechanisms, Theory, Modeling, and Simulation – Understanding the driving forces for synthesis and change, including defect dynamics – Developing, testing, and validating models based on first principles – Simulating and predicting behavior over multiple length and time scales – Materials genomes for design of advanced ceramics and glasses

The Journal accepts submissions of full-length Articles reporting original research, in-depth Feature Articles, Reviews of the state-of-the-art with compelling analysis, and Rapid Communications which are short papers with sufficient novelty or impact to justify swift publication. The Journal is dedicated to covering the most innovative, cutting edge and influential work of broad interest to the materials science community. Having established the journal as one of the most highly respected sources of news and reviews in materials science over the last two decades, it has expanded its scope to cover ground breaking original research in materials science, and aims to become a leading forum in the field. The editors welcome comprehensive articles and short communications reporting breakthrough discoveries and major technical achievements as well as review articles from established leaders in engaging and

rapidly developing fields within materials science and related disciplines. The Journal offers authors rigorous peer review, rapid publication, and maximum visibility. The journal expects to accept only the most significant submitted manuscripts, but will provide very rapid evaluation to prevent publication delays. The Journal with comprehensive coverage across materials science, spanning ground breaking discoveries to highly specialized research The Journal aims to enhance the international exchange of scientific activities in materials science and technology. The Journals reports principally the achievements of materials science and engineering all over the world, putting the stress on the original research papers, review articles invited by editor, letters, research notes with novelty as well as brief of scientific achievement, covering a broad spectrum of materials science and technology, encompassing:

- metallic materials
- inorganic nonmetallic materials
- composite materials

The Journal is an international journal for outstanding research in the field of functional materials, specifically, advanced materials in which composition, structure and surface are functionalised to confer specific, applications-oriented properties. Contributions should address the physical, chemical, or engineering sciences that underpin the design and application of these materials. The scientific and engineering aspects may include processing and structural characterization from the micro- to nano-scale to achieve specific functionality. The Editor welcomes experimental, theoretical, and review papers on biological response, biosensing, electronic, magnetic, and optical properties of materials in bulk, thin film, nanotube/nanofiber or particulate form. Research articles that focus on integrating basic and applied research on nanostructured aspects of materials are also within the scope of the journal. The main journal covers advanced materials across a broad spectrum, while two subsections are intended to focus specifically on 1) advanced functional materials, and 2) advanced biomaterials. The Journal published peer-reviewed research on functional materials, contributions might look at:

- * Functional materials for electronics and photonics
- * Materials for energy storage and harvesting
- * Advanced magnetic materials
- * Piezoelectronic, ferroelectric, pyroelectric and multiferroic materials
- * Memory materials
- * Nanostructured functional materials for advanced applications
- * Hybrid and advanced functional composite materials
- * Simulation and modelling for new functional materials
- * Applications of advanced functional materials in sensors and actuators
- * Advanced processing for functional materials