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DESCRIPTION

The Chemical Engineering Journal focuses upon three aspects of chemical engineering: chemical reaction engineering, environmental chemical engineering, and materials synthesis and processing.

The Chemical Engineering Journal is an international research journal and invites contributions of original and novel fundamental research. The journal aims to provide an international forum for the presentation of original fundamental research, interpretative reviews and discussion of new developments in chemical engineering. Papers which describe novel theory and its application to practice are welcome, as are those which illustrate the transfer of techniques from other disciplines. Reports of carefully executed experimental work, which is soundly interpreted are also welcome. The overall focus is on original and rigorous research results which have generic significance.

Within the Chemical Engineering Journal, the Environmental Chemical Engineering section presents papers dealing with emerging topics in environmental chemical and process engineering, including pollution control, separation processes, advanced oxidation processes, adsorption of contaminants, resources recovery, waste-to-energy, environmental nanotechnology and bioprocesses, CO2 capture and utilization, and micro(nano) plastic detection and remediation.

Within the Chemical Engineering Journal, the Chemical Reaction Engineering section presents papers on a wide range of topics including reaction kinetics, simulation and optimization of different types of reactors, unsteady-state reactors, multiphase reactors, and process intensification including fundamental investigations of the processes of heat, mass and momentum transfer that take place along with chemical reactions. Innovative research works addressing critical areas of reactor engineering (e.g. novel reactor designs and materials, reactor safety and environmental issues), and emerging reactor technologies (e.g. membrane reactors, chromatographic reactors, unconventional fluidized bed reactors, electrochemical reactors, micro-reactors, photoreactors, fuel-cells, enzymatic reactors, etc.) are particularly welcome. Submissions based entirely on e.g., numerical simulations with commercial CFD codes without novel experimental validation; novel sensing devices without a component of reaction engineering; theoretical mathematics; combustion in the context of energy conversion; or straightforward bioreactor applications (bacteria or animal cells) are highly discouraged, as these will find better fit in other existent journals.

Within the Chemical Engineering Journal, the Novel Materials for Energy and Advanced Applications section presents papers dealing with different aspects of the preparation and characterization of advanced materials designed for specific applications. This section represents the evolution of the highly successful Materials Synthesis and Processing section whose scope has...
been redefined to emphasize the design and application of materials in a number of fields, with energy (harvesting, storage, utilization) occupying a prominent but not exclusive role; manuscripts demonstrating applications of novel materials across multiple fields are welcomed. Manuscripts describing novel methods of synthesis as well as the processes used to obtain materials with different morphologies and/or modify the surface and structural properties of those materials will be considered provided the manuscript is written from a chemical engineering point of view. Manuscripts dealing with micro- and nano-structured materials and/or describing the preparation of composite and hybrid materials with advanced properties are particularly welcome. Given the applied character of the CEJ, we will consider manuscripts where specific applications are demonstrated for the materials synthesized.

Comments and Proposals: We are interested in receiving comments/feedback on this and our other journals and welcome publication proposals for books, electronic products, new journals and co-operation for existing journals.

AUDIENCE

Chemical and Process Engineers, Applied Chemists and Product Engineers, Biochemical Engineers and Biotechnologists.

IMPACT FACTOR

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ABSTRACTING AND INDEXING

BIOSEP Bulletin
BIOSIS Citation Index
Cambridge Scientific Abstracts
Chemical Abstracts
Chemical Engineering Abstracts
Current Contents
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Fluid Abstracts
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Tejraj (Bhavi) Aminabhavi, KLE Technological University, Hubli, India
Sustainable environmental membrane separation processes, Emerging pollutant separation and solid waste mitigation, MBR and forward osmosis for biowaste mitigation, Effluent or influent wastewater treatment by electro-coagulation, Toxic metal separation and recovery, Desulfurization, Acid/flue gas separation

Carolina Belver, Autonomous University of Madrid, Madrid, Spain
Water purification by photocatalysis, Design of novel heterostructures for environmental remediation, Water treatment by adsorption, Advanced oxidation technologies for water treatment, Environmental nanotechnology (fundamental and applications of nanomaterials)

Dionysios Dionysiou, University of Cincinnati, Cincinnati, Ohio, United States of America
His expertise and research interests include (i) physical chemical processes for water treatment and water reuse, (ii) advanced oxidation processes, including UV and solar light-based remediation
processes, (iii) treatment of contaminants of emerging concern (i.e., PFAS, pharmaceuticals and personal care products, biotoxins, heavy metals, microplastics/nanoplastics), (iv) remediation of Harmful Algal Blooms/cyanotoxins, (v) environmental nanotechnology, environmental catalysis, and nanosensing, and (vi) water-energy-food (WEF) nexus and water sustainability.

Todd Hoare, McMaster University, Hamilton, Ontario, Canada
Hydrogels, Microgels, Drug delivery, Tissue engineering, Bioprinting, Smart materials, Biosensors

Theo Philos Ioannides, Institute of Chemical Engineering Sciences, Patra, Greece
catalytic reaction engineering, Functional nanomaterials, ((electro)chemical) energy storage

Dimitris Kondarides, University of Patras Department of Chemical Engineering, Patras, Greece
Heterogeneous catalysis and photocatalysis. Development and evaluation of catalytic materials and processes for environmental and related applications

Guy Marin, Ghent University, Gent, Belgium
Chemical kinetics, Design of chemical processes and products, Process intensification, Reaction engineering

Nuno Reis, University of Bath, Bath, United Kingdom
micro-reactor technology, fluid mechanics, CFDs, gas-liquid mixing, multiphase reactors, process intensification, biological reactors, biofuels

Jesús Santamaría, University of Zaragoza, Zaragoza, Spain
Nanomaterials synthesis and characterization, nanomedicine, catalysis, advanced reactors (microwave-driven reactors, microreactors, laser pyrolysis reactors)

King-Lun Yeung, The Hong Kong University of Science and Technology, Hong Kong, Hong Kong
heterogeneous catalysis (including environmental catalysis, photocatalysis and enzyme), novel and hybrid reactor system, miniature flow reactor and microreactor, green and fine chemistry.

Associate Editors

Soryong (Ryan) Chae, University of Cincinnati, Cincinnati, Ohio, United States of America
Biological processes for water recycling and reuse, Resource recovery, Membrane technology for water and energy, Environmental nanotechnology

Paolo Falcaro, Graz University of Technology Institute of Physical and Theoretical Chemistry, Graz, Austria
Porous materials, self-assembly, MOFs, MOF composites, film deposition methods

Bin Gao, University of Florida, Gainesville, Florida, United States of America
Biochar Technology, Environmental Nanotechnology, Contaminant Fate and Transport

Hrvoje Kušić, University of Zagreb Faculty of Chemical Engineering and Technology, Zagreb, Croatia
Advanced oxidation technologies for water treatment, (photo)Fenton processes, persulfate based processes, photocatalysis, solar-active materials, process simulation and optimization, mechanistic/phenomenological modeling, QSA/PR modeling

Eilhann Kwon, Sejong University Department of Energy and Environment, Seoul, South Korea
Waste-to-Energy (WtE), Combustion chemistry, Thermo-chemical processes (pyrolysis and gasification), Catalysis, Biofuels, Bio refineries, CO2 utilization, Carbon capture and storage (CCS), Waste and biomass valorization, Green chemistry, Environmental sustainability, Air pollution controls

Yuekun Lai, Fuzhou University, College of Chemical Engineering, Fuzhou, China
Bioinspired functional surfaces with special wettability (superhydrophobicity/hydrophilicity), water-oil separation and purification, self-cleaning and antifogging coatings, photo(electro)catalysis, water splitting, functional membranes and fabrics, transparent multifunctional films, biomedical scaffolds, aerogel, sustainable chemical engineering processes, nanomaterials for environmental and energy-related applications

Alexei Lapkin, University of Cambridge Department of Chemical Engineering and Biotechnology, Cambridge, United Kingdom
Catalytic reaction engineering, Multiphase catalytic reactors, Membrane catalysis, Membrane gas separation, Life cycle assessment, Machine learning for process development, Process optimisation, Biofeedstocks conversion (valorisation)

Urška Lavrenčič Štangar
heterogenous photocatalysis in water and air, AOPs, self-cleaning and antifogging surfaces, wet chemistry synthesis of materials, materials characterization

Jinwoo Lee, Korea Advanced Institute of Science and Technology, Daejeon, South Korea

Angeliki Lemonidou, Aristotle University of Thessaloniki, Thessaloniki, Greece
Heterogeneous catalysis, chemical kinetics, reactor design, (petro)chemical processes, carbon capture and utilization processes, process intensification (chemical looping), natural gas valorization, biomass chemo and thermo-catalytic conversion.

Wen-Wei Li, University of Science and Technology of China Department of Chemistry, Hefei, China
Bioelectrochemical systems, Extracellular electron transfer, Photoelectrochemical/electrochemical process for pollutant degradation, Membrane-based water treatment process, Membrane fouling, Nanoparticles biosynthesis, Resource recovery from wastewater

**Simona Liguori**, Clarkson University Department of Chemical and Biomolecular Engineering, Potsdam, New York, United States of America

Carbon capture, membrane separation, membrane reactor, thermochemical processes, hydrogen production and ammonia synthesis, process intensification.

**Emma Lovell**, University of New South Wales, Sydney, New South Wales, Australia

Nanomaterials, Catalysis, Plasmonics, Energy materials, Materials for energy and environmental science, Electrocatalysis and electrochemistry, Non-thermal Plasma, Flame synthesis

**Lukasz Marciniak**, Institute of Low Temperature and Structure Research Polish Academy of Sciences, Wroclaw, Poland

Nanoparticles, colloidal systems, glasses, single-crystals, optical properties, luminescence, lanthanide ions, transition metal ions, inorganic wet chemistry synthesis, advanced multifunctional materials, luminescence assisted sensing and imaging, luminescence thermometry, luminescence manometry, downshifting, up-conversion, energy transfer processes, material science, material engineering

**Eva Martin Del Valle**, University of Salamanca, Salamanca, Spain

nanomaterials, affinity separations, drug delivery, simulation

**David Nisbet**, The University of Melbourne Graeme Clark Institute for Biomedical Engineering, Melbourne, Australia

Hydrogels, electrospinning, self-assembled peptides, gene therapy, drug delivery, cell transplantation, regenerative medicine, antimicrobial materials

**Bingcai Pan**, Nanjing University, Nanjing, China

Wastewater treatment, Environmental Nanotechnology, Advanced oxidation processes, Adsorption, Analytical methods

**Ji-Ho Park**, Korea Advanced Institute of Science and Technology Department of Bio and Brain Engineering, Daejeon, South Korea

Nanomedicine, Drug delivery, Nanomaterials for biomedical applications

**Suresh C. Pillai**, Institute of Technology Sligo, Sligo, Ireland


**Cristina Sáez**, University of Castilla-La Mancha, Department of Chemical Engineering, Ciudad Real, Spain

Water and wastewater treatment technologies, Electrochemical advanced oxidation processes, Disinfection of water, Remediation of soil, Synthesis of oxidants

**Stefania Specchia**, Polytechnic of Turin Department of Applied Science and Technology, Torino, Italy


**Radostina Stoyanova**, Bulgarian Academy of Sciences, Institute of General and Inorganic Chemistry, Sofia, Bulgaria

solid state chemistry, materials for energy storage, lithium ion batteries, sodium ion batteries, electron paramagnetic resonance spectroscopy, structure characterization, intercalation chemistry

**Antonio Tricoli**, The University of Sydney, Sydney, New South Wales, Australia

Chemical Sensors Biosensors Medical diagnostics, Plasmonic, Optoelectronics, Catalysis, Electrochemistry, Thermochemistry, Electrolysis/Water Splitting, Photoelectrochemistry, CO2 reduction, Batteries, Super(de)wetting (e.g. super-hydrophilic, -hydrophobic, -omniphobic), Metal Oxides, Transition Metals, Metal-Organic Frameworks, Flame synthesis

**Yiu Fai Tsang**, The Education University of Hong Kong, New Territories, Hong Kong

Wastewater and sludge treatment, Bioremediation/environmental bioprocesses, Resource recovery from organic waste, Microbial CO2 fixation, Microfibres and nanoplastics, Odour pollution control

**Yusuke Yamauchi**, The University of Queensland School of Chemical Engineering, Brisbane, Queensland, Australia

Nanoarchitectured materials; Nanoporous materials; Inorganic materials chemistry; Inorganic synthetic chemistry; Energy and environmental applications

**Aiping Yu**, University of Waterloo, Waterloo, Ontario, Canada

Nanomaterials development for polymer composites ( thermal management, corrosion) and energy storage/conversion (supercapacitors, batteries, photocatalysts)

**Scientific Managing Editor**

**Morteza Davarpanah**, Elsevier
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New sorbents and catalysts, Surface characterization, Adsorption/desorption phenomena, Gas separation, Deep desulfurization of fuels, Catalytic photooxidation, Graphite oxide based composite, Gas sensors, Energy storage
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Carbon materials, Metal organic frameworks (MOFs), Catalysis, Advanced oxidation processes (AOPs), Ionic liquids
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Solar cells, Batteries, Supercapacitors, Chemometrics, Circular economy, Electrochemical nitrogen reduction
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Plasma chemistry, plasma reactor design, plasma-based gas conversion, plasma catalysis, plasma medicine, numerical modeling
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Fluid Mechanics, Environment, Buoyancy, Plumes & Jets, Porous Media
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Polycarpos Falaras, Ethniko Kentro Ereunas Physikon Epistemon 'Demokritos', Athens, Greece
Functional molecular materials; Nanostructured semiconductors; Water purification; Photocatalytic reactors; Third generation solar cells
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Pilar Fernández-Ibañez, Ulster University Engineering Research Institute, Newtownabbey, United Kingdom
María Elena Gálvez, Sorbonne University Faculty of Science and Engineering, Paris, France
Process intensification, plasma-catalysis, CO2 utilization, thermochemistry, solar fuels
Jorge Gascon, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
Anett Georgi, Helmholtz-Centre for Environmental Research - UFZ, Leipzig, Germany
Advanced oxidation processes, water treatment and groundwater remediation, PFAS (poly- and perfluorinated alkyl substances) - fate and remediation, environmental catalysis, advanced adsorption and electrosorption strategies
Antoine Ghauch, American University of Beirut, Beirut, Lebanon
Advanced Oxidation Technologies; Effluents Decontamination; Catalysis; Instrumental Analysis; Spectroscopy;
Lauren Greenlee, The Pennsylvania State University, University Park, Pennsylvania, United States of America
Hans Kuipers, University of Technology Eindhoven Department of Chemical Engineering and Chemistry, Eindhoven, Netherlands
Multiphase Reactors, Multiphase Flow, Computational Fluid Dynamics, Multi-Scale Modelling
Gianluca Li Puma, Loughborough University Department of Chemical Engineering, Loughborough, United Kingdom
Photocatalysis, Environmental nanocatalysis, Advanced oxidation processes, Environmental remediation, Solar energy conversion and Photoreaction engineering.
Heng Liang, Harbin Institute of Technology, School of Environment, Harbin, China
Membrane-based water treatment process, Membrane fouling, Drinking water treatment, Water reuse, Advanced oxidation
Jun Ma, Harbin Institute of Technology School of Municipal and Environmental Engineering, Harbin, China
Dionissios Mantzavinos, University of Patras Department of Chemical Engineering, Patras, Greece
Environmental chemical engineering, Advanced oxidation processes, Wastewater engineering, Applied catalysis
Malikarjuna N. Nadagouda, US Environmental Protection Agency Center for Environmental Solutions and Emergency Response, Cincinnati, Ohio, United States of America
Nanotechnology, Green Chemistry, Water Research, Polymer Chemistry, Materials Chemistry
Alexander Orlov, Stony Brook University, Stony Brook, New York, United States of America
Design of nanomaterials, Nanocomposites and nanostructured surfaces, Sustainable energy generation, Heterogeneous catalysis, Photocatalysis, In-situ studies of catalysts and surface science,
Physicochemical methods for water and air treatment, Sustainable and green engineering, Pollution prevention

**Covadonga Pevida**, Carbon Science and Technology Institute, Oviedo, Spain
Biomass utilization, CO2 capture, gas separation by adsorption processes, renewable H2 production, bioenergy, Pre-combustion carbon capture process development, Gasification of carbonaceous feedstock, Oxy-fuel combustion, Post-combustion carbon capture process development, CO2

**Xie Quan**, Dalian University of Technology School of Environmental Science and Technology, Dalian, China
Advanced oxidation technologies(AOTs), Functional materials for environmental application, Electrocatalysis, Photocatalysis, Membrane separation

**Zhiyong Jason Ren**, Princeton University, Princeton, New Jersey, United States of America
Water resource recovery, Wastewater treatment, Microbial electrochemistry, Functional membranes

**Alirio Rodrigues**, University of Porto, Porto, Portugal
Cyclic adsorption/reaction processes, Perfume Engineering, Lignin valorization, CO2 capture and utilization, Modeling and simulation

**Vicente Rodriguez Gonzalez**, Potosi Institute of Scientific and Technological Research, San Luis Potosi, Mexico
Photo-inactivation, Agricultural photocatalysis, H2 production, Hydrothermal method, Microwave synthesis

**Geoff STEVENS**, The University of Melbourne Department of Chemical Engineering, Parkville, Victoria, Australia
Separation Processes, Solvent Extraction, Ion Exchange

**Andreas Seidel-Morgenstern**, Otto von Guericke University, Magdeburg, Germany
Reaction Engineering, Forced Dynamic Operation, Chromatography, Crystallization

**Mahadevan Surianarayanan**, CSIR-Central Leather Research Institute, Chennai, India
Environmental remediation/degradation of toxic chemicals, Membrane bioreactors for the treatment or separation of toxic/industrial effluents, Chemical process safety, Bioprocess monitoring and control through metabolic heats.

**Stanislaw Waclawek**, Institute for Nanomaterials Advanced Technology and Innovation, Liberec, Czechia
AOPs; nanomaterials; green chemistry; catalysis

**Laurence Russell Weatherley**, The University of Kansas, Lawrence, Kansas, United States of America
Process intensification, Liquid-Liquid systems, Ion Exchange, Biocatalysis, Phase transfer catalysis

**Ruiyang (Ray) Xiao**, Central South University, Changsha, China
Advanced oxidation processes, Radical chemistry, Computational chemistry, Environmental modelling

**Pai Xu**, The University of New Mexico, Albuquerque, New Mexico, United States of America
Catalysis, nanomaterial, energy, water treatment

**Xing-Gui Zhou**, East China University of Science and Technology, Shanghai, China
GUIDE FOR AUTHORS

INTRODUCTION

Submission of Papers: Manuscripts should be submitted to one of the following section Editors as defined in the journal Aims & Scope and according to the Editor's specialties. If you are unsure about to whom you should submit a manuscript, please submit it to any Editor in the appropriate section.

Environmental Chemical Engineering:

Stephen Allen: Adsorption (liquid and gas); Ion exchange; Water treatment (physico/chemical methods); Air/gas treatment, NOx control, CO2 capture; Constructed wetlands and reed beds for water treatment; Agricultural wastes (liquid and solid); Solid waste treatment and bioconversion; Sustainable development or processes

Tejraj Aminabhavi: Environmental membrane filtration processes; Emerging pollutant separation and solid-waste minimization; Environmental pollution abatement; Effluent or influent treatment by electrocoagulation and membrane distillation; Toxic metal separation and recovery; Acid/flue gas separation; Desulfurization

Dionysios (Dion) Dionysiou: Advanced oxidation processes/technologies (AOPs/AOTs); Photocatalysis; Environmental catalysis ; Membranes processes; Electrooxidaion, electrochemical methods ; Particle separation; Separation processes ; Environmental nanotechnology (focus on environmental remediation, environmental sensing)

Chemical Reaction Engineering:

Guy B. Marin: Chemical kinetics; heterogeneous catalysis; (petro)chemical processes, polymerization, reactor design and modelling, reactor scale-up, crude oil refining, natural gas valorisation, renewables

Nuno M. Reis: Micro-reactor technology, fluid mechanics, CFDs, gas-liquid mixing, multiphase reactors, process intensification, biological reactors, biofuels

King Yeung: Heterogeneous catalysis (including environmental catalysis, photocatalysis and enzyme), novel and hybrid reactor system, miniature flow reactor and microreactor, green and fine chemistry

Novel Materials for Energy and Advanced Applications:

Todd Hoare: Functional polymers and polymer nanocomposites; biomaterials and materials for biomedical applications; superhydrophobic/superwetting materials; flame retardant materials; corrosion inhibiting materials; novel encapsulation methods and applications

Dimitris I. Kondarides: Materials for energy storage devices (primary and secondary batteries; supercapacitors); materials for solar energy conversion and storage (photo(electro)catalytic water splitting, CO2 reduction, nitrogen fixation; dye-sensitized solar cells); energetic materials; electromagnetic wave absorbing materials; luminescent materials and phosphors

Theophilos Ioannides: Electrochemical energy storage (batteries, supercapacitors), Dielectric capacitors, Thermal energy storage (phase change materials), Chemical energy storage, Solar evaporation, Thermoelectrics, Electromagnetic wave absorption and interference shielding, Triboelectric generators, Energetic materials Reviews and Perspectives:

Jesus Santamaria: Submissions on Review Articles and Perspectives will be handled by Professor Santamaria.

Types of papers

The editors make every effort to ensure that manuscripts are fairly and independently reviewed. Submissions which describe novel theory and its application to practice are welcome, as are those which illustrate the transfer of techniques from other disciplines.
Reports of carefully executed experimental work which is soundly interpreted are also welcome. Manuscripts of routine studies, however, presenting experimental data but without any significant new interpretation or novelty, or that are very specific and applied in their scope, will be rejected by the editors as "lacking in novel content".

Original papers - these should be complete and authoritative accounts of work, which has a special significance and must be presented clearly and concisely.

Review articles - We expect our reviews to be authoritative pieces of work, aimed at describing recent progress in relevant research areas within the scope of the Journal, with the non-expert reader in mind. Rather than attempting a thorough review of the field, authors should concentrate on essential developments, to give a balanced account of the state of the art, discuss key results and provide insight on the perspectives for that research field. Prospective authors of a review article may consult with the Review Editor or one of the other Editors to check the suitability of their topic and material before submitting their review. To keep the review manuscripts concise and readable, as a general rule they should be limited to 10,000 words, 10 figures and up to 150 references.

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Short communications - will be accepted for the early communication of important and original advances. Such accounts may be of a preliminary nature but should always be complete and should not exceed the equivalent of 3000 words, including figures and tables.

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You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

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• Referee suggestions and contact details provided, based on journal requirements

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BEFORE YOU BEGIN

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