### TABLE OF CONTENTS

- Description p.1
- Impact Factor p.3
- Abstracting and Indexing p.3
- Editorial Board p.3
- Guide for Authors p.5

### DESCRIPTION

**ChERD** aims to be the principal international journal for publication of high quality, original papers in chemical engineering.

Papers showing how research results can be used in chemical engineering design, and accounts of experimental or theoretical research work bringing new perspectives to established principles, highlighting unsolved problems or indicating directions for future research, are particularly welcome. Contributions that deal with new developments in plant or processes and that can be given quantitative expression are encouraged. The journal is especially interested in papers that extend the boundaries of traditional chemical engineering.

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Core topic areas:

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- Hydrodynamics, heat and mass transfer in separation equipment
- Physical properties and thermodynamic models/methods
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- Process equipment characterisation
- Process modelling, simulation and optimisation

**Fluid flow**

- Fluid flow and mixing in process equipment
- Reactive flow
- Turbulent flow
- Microfluidics
- Multiphase flow
- Computational fluid dynamics
- Porous media flow
- Interfacial flows, coating & wetting phenomena
- Complex fluids
• Non-Newtonian fluids
• Flow visualization

**Heat and mass transfer**

• Mechanisms of heat and mass transfer
• Multicomponent mass transfer
• Simulation of heat and mass transfer processes
• Simultaneous heat and mass transfer

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• Fundamental properties of interest to processing of materials
• Injection moulding of materials
• In-line measurement and control of material processes
• Morphological development processes
• Pre-processing, shaping, multi-layering and finishing of final product form
• Product design based on chemical engineering tools
• Structure-function relationships in products and relevant systems
• Tailoring chemical products and materials for end-use applications

**Particle technology**

• Crystallisation and precipitation
• Design of particulate systems and processes
• Formation and synthesis of particulates
• Kinetics of particulate processes
• Measurement and characterisation of particulate systems
• Processing, handling and storage of powders and dispersions
• Product formulation and rheology

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• Design, modelling, operation and control of pharmaceutical (bio)reactors, unit operators and process systems used in the production of (bio)pharmaceuticals
• Application of process analytical technology in pharmaceutical product and process design and characterisation
• Pharmacokinetic and pharmacodynamic modelling
• Design, characterisation and modelling of drug delivery systems

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• Process design and integration
• Process modelling, simulation and optimization
• Process operations and control
• Techno-economic analysis

**Reaction engineering**

• Catalysis engineering
• Process intensification
• Reaction kinetics
• Reactive flows
• Reactor development, modelling and scale-up

**Separation processes**

• Absorption science and technology
• Green processes
• Intensification and integration of separation processes
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• Phase separation: clarification, flocculation, microfiltration
• Reactive separation processes: hybrid and novel separation techniques
• Separation by phase change

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Examples:
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