International Journal of Chemical Engineering

Special Issue on
Computational Fluid Dynamics and Design

Hindawi

CALL FOR PAPERS

Computational Fluid Dynamics (CFD) is a powerful tool for the design and optimization of new and existing processes and products in chemical as well as other industries. Advent of reliable models and a substantial increase in computational power during the last decade have been dominant factors for rapid and continued growth of industrial utilization of CFD.

Despite significant research and development efforts on both academic and industrial front in the area of CFD in recent past, there exists continuous demand for advancement to achieve better predictability over a wide range of applications. Amongst noteworthy deficiencies are the lack of the reliability of predictions for the multiphase flows and unavailability of methodologies for the computationally efficient coupling of CFD with population balances or reaction engineering models.

To this order, we invite original as well as review contributions to demonstrate advancement in CFD modeling and its predictive power for the flows with complex physics. Contributions that deal with developments in numerical techniques and innovative computational approaches for CFD are encouraged. We also welcome contributions revealing potential of CFD and its applications in practice.

Potential topics include but are not limited to the following:

- ► Multiphase flow
- ► Turbulent Flows: Modeling and LES/DNS
- ► Coupling of CFD and population balance
- ► Coupling of CFD with optimization algorithm
- ► Modeling of fluid-structure interactions
- ► Supersonic and hypersonic flows
- ► Combustion and reacting flows
- ► Electrochemical flows
- ► Non-Newtonian fluid dynamics
- ► New algorithms and numerical schemes
- ► Grid free and Cartesian methods
- ► Moving mesh and immersed boundary methods
- ► Process intensification and design of novel reactor configuration
- ► Micro reactors and microchemical process systems
- ► Electrochemical reactors
- ► Plasma flows
- ► Case studies demonstrating use of CFD for industrial problems

Authors can submit their manuscripts through the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/ijce/cfdd/.

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