

Message from the Editors-in-Chief

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Dear authors and readers,

It is our great pleasure and excitement to announce the launch of a new journal, *Experimental and Computational Multiphase Flow*, which will publish original, high-quality, peer-reviewed research papers and review articles on fundamental and applied transport phenomena of mass, momentum, and heat in multiphase flows, from theoretical, experimental, and computational perspectives.

The simultaneous presence of several different phases in external and internal flows such as gas, liquid, and solid is found in daily life, environment, and numerous industrial processes. These types of flows are termed multiphase flows, which may exist in different forms depending on the phase distribution, such as separated and dispersed systems. Examples are gas–liquid or gas–solid/pebble flow in nuclear reactors, crude oil recovery, circulating fluidized beds, sediment transport in rivers, pollutant transport in the atmosphere, cloud formation, fuel injection in engines, bubble column reactors, and sprays for food processing, to name only a few. As a result of the interaction between the different phases, such flows are rather complicated and very difficult to be described theoretically.

Consequently, the numerical calculation of multiphase flow systems based on computational fluid dynamics (CFD) methods comprises a multitude of different numerical methods each applicable to different types of multiphase flows and resolving different length of the time scales of the problem. It is not surprising that the reliance on computational investigations of multiphase flows will only continue to grow due to the rapid advancement of computers. Meanwhile, the research in the field of experimental multiphase flow has been advanced as a result of the availability

of optical diagnostics and other advanced measurement methods that allow the simultaneous measurement of particle size and the velocity of the dispersed phase. The experimental techniques that provide an accurate spatial and temporal measurement to describe the multiphase flow systems under controlled conditions is critical to assess and validate multiphase flow models developed from theoretical and computational approaches.

It is imperative that new ideas and lessons learnt in the development of reliable models, robust numerical methods, and experimental assessment through dedicated researchers in resolving a wide diversity of multiphase flows are communicated. The seamless transfer of these new ideas and lessons learnt should reach the end-user, such as practitioners of multiphase fluid dynamics and practicing engineers in industry. It is of this purpose that this journal has been created in order to facilitate the exchange of knowledge and convey leading edge development in a whole spectrum of topics in multiphase flows.

The journal will be published quarterly with rigorous reviews to ensure high-quality, novel researches being published that advance our field. The editorial board strives to provide authors with a productive, fair, and timely review experience. It is our sincere hope that all researchers in the field will enthusiastically access our journal and make it an important vehicle for furthering a better understanding of multiphase flows.

Sincerely,

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