

Special Issue on  
**Theory and Experiment in Multiphase Flow and Heat Transfer**

# CALL FOR PAPERS

Despite substantial progress in the understanding of multiphase flow and heat transfer and the technologies that these new insights have enabled, there remains a paucity of information related to several important aspects of flow and transfer mechanisms. Deficiencies exist, for example, in the understanding of bubble dynamics and associated concepts, such as virtual mass effects, behaviors in surfactant loaded solutions, and bubble motion in flotation froths.

The importance of flow and heat transfer is evident through its interest to a broad range of scientists, including mechanical, chemical, nuclear, petroleum, environmental, mining, and materials engineers. We invite the submission of contributions to this special issue, as both original research and focused review articles, from all of these communities. Experimental and theoretical works are equally welcomed, and investigations which approach problems from both directions are especially encouraged.

Potential topics include but are not limited to the following:

- ▶ Two-phase gas-liquid, gas-solid, and liquid-solid flows
- ▶ Multiphase gas, liquid, and solid flow
- ▶ Flow regime maps, particularly in downward flow conditions
- ▶ Void fraction measurements (especially in relation to utilization of nuclear radiation, capacitances, ultrasonic, fiber optics, and other techniques)
- ▶ Flow with phase change
- ▶ Boiling and condensation in nonflow conditions
- ▶ Bubble dynamics (e.g., towards a better understanding of Taylor and spherical-cap bubbles)
- ▶ Cavitation and pitting in metals
- ▶ Nuclear thermal hydraulics
- ▶ Nuclear applications in fluids
- ▶ Heat conduction and the effect of pressure on heat conduction in solids
- ▶ Heat radiation and convection
- ▶ Transport phenomena (e.g., in relation to gas hydrates for energy and power generation)

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/je/mechanical.engineering/mfht/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

**Special Issue Editor in Chief**

Abdullah A. Kendoush, Augusta  
Technical College, Augusta, USA  
[akendoush@augustatech.edu](mailto:akendoush@augustatech.edu)

**Guest Editors**

Ayyoub M. Momen, Oak Ridge  
National Laboratory, Oak Ridge, USA  
[momena@ornl.gov](mailto:momena@ornl.gov)

Hussein Togun, Thi Qar University,  
Nasiriyah, Iraq  
[htokan\\_2004@yahoo.com](mailto:htokan_2004@yahoo.com)

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