Special Issue

Advances in Multiphase Flow Measurement and Simulation

Message from the Guest Editors

Multiphase flow is the core flow form in the fields of energy, chemical engineering, petroleum, metallurgy, and new energy. Its complex interactions between phases, dynamic evolution of interfaces, and coupling of multiple physical field strengths have long posed key technical bottlenecks for high-precision measurement and efficient numerical simulation. This Special Issue focuses on the cutting-edge developments in multiphase flow measurement and simulation. The system includes advanced testing technologies such as non-invasive online detection, synchronous measurement of multiple physical fields, intelligent identification of flow patterns, as well as research results on CFD numerical modeling, cross-scale simulation, multi-method coupling simulation and AI-driven numerical optimization. Intended to promote the collaborative improvement of multiphase flow measurement accuracy and simulation efficiency, promote theoretical innovation, technological breakthroughs and deep integration of engineering applications and provide academic support and reference for technological upgrades in related industrial fields.

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