

Special Issue

Rarefied Gas Flows: From Micro-Nano Scale to Hypersonic Regime

Message from the Guest Editor

The physics of rarefied gas transport at micro and nano scales and at hypersonic regimes has attracted the attention of many researchers from multi-disciplinary fields. The detection of non-intuitive and unusual behaviors of gas flow at the micro and nano scales has assisted engineers in developing a diverse range of technologies, from lab-on-a-chip devices for medical diagnostics to water filtration systems using carbon nanotubes. Advances in kinetic theory and numerical methods to treat rarefied gas flows, such as direct simulation Monte Carlo (DSMC), Fokker–Planck, and other schemes, make the study of flow at hypersonic regimes and beyond less time-consuming and more accurate. This Special Issue aims to elucidate past developments, report the current knowledge, and illuminate the future of rarefied gas dynamics. As a leading researcher in the field, we would very much appreciate if you could contribute to this Special Issue by reporting your work on advancing our understanding of rarefied gas flows from micro–nano scales to hypersonic regimes. For more information, you can view: https://www.mdpi.com/journal/fluids/special_issues/D99589YJ2Z

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