

EDITORIAL

This special issue of *High Temperatures-High Pressures* brings together nine papers from the 26th Symposium of the Korean Society of Thermophysical Properties (KSTP), held from April 8 to 10, 2026, at Pohang University of Science and Technology (POSTECH) in Pohang, Gyeongsangbuk-do, Republic of Korea. The symposium provided a forum for researchers to exchange recent findings in thermophysical properties and their engineering applications. The contributions in this issue reflect this scope, covering energy storage and conversion, cryogenic applications, and the measurement and control of heat transport.

Energy applications form a substantial part of the issue. Two studies consider solar energy utilization: one examines how nanoparticle type affects the heat storage performance of solar salt, while the other investigates surfactant-dependent optical properties of Al_2O_3 nanofluids. A thermodynamic cycle analysis explores ammonia as both fuel and working fluid in a combined cycle. Complementing these studies, a contribution on transient liquid phase sintering paste addresses porosity control for high-temperature thermoelectric modules.

At cryogenic temperatures, the focus turns to thermal interfaces and conductor configuration. One paper examines the influence of thermal interface materials on temperature distribution in a cryogenic stage. Another investigates the effect of conductor arrangement on critical current degradation in stack-parallel REBCO conductors at 77 K. These studies address distinct aspects of component performance under low-temperature operating conditions.

Measurement and the control of heat transport provide a further link among the contributions. Low-velocity airflow sensing is investigated through the temperature response of a 3ω microheater on a silicon nitride membrane. Thin-film thermal conductivity is characterized using scanning thermal microscopy with an effective thermal contact model. A study of stacked carbon-fiber-reinforced polymer layers examines thermal rectification as a function of fiber orientation. Together, these topics draw attention to how thermal responses are interpreted and how material architecture can be used to influence heat flow.

By bringing these studies together, this issue continues the KSTP's exchange of research across thermophysical measurement and engineering applications. We hope that readers will find useful connections between the methods developed for specific materials and the thermal challenges encountered in their own work. Finally, we thank the contributing authors for their work and the reviewers for their careful assessment of the manuscripts. We also gratefully acknowledge the editors and publishing staff of High Temperatures-High Pressures for their support in preparing this special issue.

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