

# Foreword

## Special Issue on the 2024 International Conference on Physics of Reactors (PHYSOR 2024)

### *Guest Editors*

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The 2024 International Conference on Physics of Reactors (PHYSOR 2024) is part of a series of topical meetings organized by the Reactor Physics Division of the American Nuclear Society (ANS). PHYSOR 2024 was hosted April 21–24, 2024, in San Francisco, California.

It is an exciting time to be a reactor physicist! Government organizations and numerous established and start-up companies are pushing to build the next generation of advanced nuclear reactors. Some of these reactors are traditional, some are nontraditional, but all offer the potential to produce clean energy on a massive scale. All of these designs have benefited from research in the reactor physics community, and with this in mind we celebrate the research that was presented at PHYSOR 2024.

This special issue of *Nuclear Science and Engineering* (NSE) comprises papers from PHYSOR 2024 representing its wide range of topics of interest, including advanced reactor design, transient analysis, space reactors, experimental reactor physics, research reactors, deterministic methods, Monte Carlo methods, machine learning methods, sensitivity and uncertainty analysis, reactor fuel cycles and fuel management, isotope production, and nuclear nonproliferation.

The participants at PHYSOR 2024 were given a plethora of options regarding talks to attend: The meeting hosted six parallel sessions with approximately five presentations in each session, totaling

roughly 260 oral presentations. In addition to these technical sessions, the meeting offered three morning plenary sessions and a track of various panel sessions on issues that directly and indirectly affect the reactor physics community. The conference also hosted several social events, including a Wednesday evening banquet, which provided additional networking opportunities for participants.

The research presented at PHYSOR 2024 is vital to the development of both next-generation reactors and future generations of advanced reactor concepts. It is our hope that this special issue of NSE will serve as a long-term celebration of the research presented at PHYSOR 2024 and will reflect the dedication of both the organizing committee and the conference participants who made the meeting highly successful. Finally, we would like to express our gratitude to Farzad Rahnema (editor of NSE), David Strutz (production manager at ANS), and Faith Michal (peer review specialist at ANS) for their guidance, professional service, and patience throughout the production of this special issue.

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