

## Special Issue

# Innovations in Multi-Physics Modeling and Material Characterization for Advanced Nuclear Reactors

### Message from the Guest Editors

Next-generation nuclear reactors, such as microreactors and Gen-IV reactors, promise to revolutionize the energy landscape by opening new markets for nuclear industry. Currently, and only in North America, there are more than 30 private companies working to bring these new reactors to the market. In addition, many research institutions, including the top national laboratories and universities, are providing support to this development by offering advanced computational methods and state-of-the-art testing for the materials and components of nuclear reactors. This Special Issue will focus on the modeling and experimental advancements in the field of advanced nuclear reactors. The relevant topics include core design, multiphysics methods and analyses, experimental and computational material characterization, and the ML/AI method to accelerate the development and deployment of advanced nuclear reactors. The types of nuclear reactors considered in this Special Issue include, but are not limited to, microreactors, special purpose reactors, reactors for space applications, and Gen-IV reactors, including molten salt and gas-cooled reactors.

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### Deadline for manuscript submissions

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## Journal of Nuclear Engineering

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#### Editor-in-Chief

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