



CALL FOR PAPERS

SPECIAL ISSUE ON

**CURRENT DEVELOPMENTS IN INTERACTIVE PEDAGOGIES IN TEACHING AND
LEARNING OF ENERGY-RELATED ENGINEERING SUBJECTS**

Guest Editors

**Diana Bairaktarova and Thomas Diller
Virginia Polytechnic Institute and State University, USA**

Contributions are invited for a special issue of the International Journal of Engineering Education (IJEE) on Current Developments in Interactive Pedagogies in Teaching and Learning of Energy-related Engineering Subjects.

In recent years, there has been considerable interest in using digital games, virtual experiments, interactive simulations, and hands-on activities to enhance engineering education with a range of outcomes. As a result of these developments, new knowledge is emerging about how these tools can be used to enhance student engagement and higher order learning skills. This is particularly important for solving abstract and complex engineering problems such as encountered in energy-related fields. An example in the undergraduate engineering curriculum, is thermodynamics, which introduces concepts that are abstract and difficult, with students having numerous preconceived misconceptions. Interactivity and visualization are learning affordances for physical objects. A wide range of objects (with different scale, complexity, affordance, etc.) are needed to address conceptual understanding in energy engineering, which makes it very difficult to use physical objects to enhance student learning. To this end, engineering educators are creatively utilizing computer modeling and simulations as a resource in design students learning environments.

With this special issue, we aim to offer a collection of recent studies on the impact of interactive pedagogies and technology-enhanced learning environments in the teaching and learning of energy-related engineering subjects, including power production and utilization, heat transfer and fluid mechanics. Example pedagogical topics in the issue may include, but are not limited to:

- Technology-enhanced learning environments to support learning
- Development of Extended Reality (XR) learning environments and Usability studies

- The use of Extended Reality (XR) technologies and their impact on learning
- Hands-on learning modules
- Mobile learning

Important Deadlines

Extended abstract (around 2 pages)	February 28, 2023
Notification of Reviewers' feedback	March 31, 2023
Submission of manuscripts	June 30, 2023
Notification of Reviewers' feedback	August 31, 2023
Submission of final manuscripts	October 31, 2023

Submissions are to be sent by e-mail in MSWord to Dr. Diana Bairaktarova at dibairak@vt.edu

General information and guidelines are available at the IJEE Web site:

<https://www.ijee.ie/>

Specific Information for authors is available at:

https://www.ijee.ie/2022_Guide%20for%20Authors.pdf

https://www.ijee.ie/Submission%20Guidelines_2015.html

<https://www.ijee.ie/PageCharge.html>