**Preface: Second International Conference on Physical Research and Engineering Technology Problems – (PRETP 2025)**

Namangan State Technical University, Namangan, Uzbekistan, is honored to host the Second International Conference on Physical Research and Engineering Technology Problems (PRETP 2025) from December 10th to 12th, 2025. Building upon the success of the inaugural conference, PRETP 2025 unites leading academic and research institutions worldwide, including St Petersburg University (Russia), Almaty Technological University (Kazakhstan), Ege University (Turkey), Tashkent Institute of Textile and Light Industry (Uzbekistan), Urgench State University (Uzbekistan), Don State Technical University (Russia), University of Gdańsk (Poland), Russian State University named after A.N. Kosygin (Russia), and Vitebsk State Technological University (Belarus). This collaborative effort is dedicated to exploring transformative advancements at the intersection of physics, engineering, and technology.

The conference is structured around four core thematic tracks, each addressing pressing challenges and innovations in modern applied science:

Applied Physics and Thermofluid Engineering, covering engineering applications of electromagnetic and thermal fields, heat and mass transfer, vibrations and acoustics, and physics-based modeling of industrial systems.

Advanced Materials and Surface Engineering, focusing on thermophysical properties of functional materials, tribology, smart and nanostructured materials, and the mechanical behavior of technical textiles.

Chemical and Process Engineering for Sustainability, emphasizing green technologies, surface chemistry, waste valorization, circular economy, and physical-chemical analysis of industrial processes.

Automation, Mechatronics, and Smart Manufacturing, exploring intelligent control systems, robotics, sensor-based monitoring, digital twins, and optimization of smart production systems.

PRETP 2025 aims to serve as a dynamic forum for sharing cutting-edge research, fostering interdisciplinary dialogue, and shaping future directions in science and engineering. The conference also seeks to strengthen innovative ecosystems at national, regional, and international levels by integrating knowledge across fields such as biophysics, computer engineering, artificial intelligence, automation, and robotics.

The event will facilitate both in-person and virtual participation via modern digital platforms, welcoming professors, researchers, and industry experts from across the globe. Their contributions are anticipated to significantly enrich academic discourse and inspire practical applications across multiple sectors.

This proceedings volume captures the essence of the intellectual exchange during the conference, offering a curated collection of insights that will guide future research, collaboration, and technological development in these vital domains.

Sherzod Korabayev

Conference Chair, PRETP 2025

Namangan State Technical University, Namangan, Uzbekistan