

# Foreword

## VII International Conference on Applied Physics, Information Technologies and Engineering – APITECH-VII 2025

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**Abstract.** The VII International Conference on Applied Physics, Information Technologies and Engineering (APITECH-VII 2025) was held on February 14-15, 2025, in Bukhara, Uzbekistan. The event brought together researchers from seven countries, focusing on urgent developments in applied physics and its interdisciplinary applications. The conference covered three main sections: Applied and Industrial Physics, Condensed Matter Physics and Materials Science, and Quantum Physics and Optics. A rigorous selection process ensured only high-quality, original papers were included in the proceedings. The conference emphasized the practical relevance of applied physics research, demonstrating how theoretical concepts are being implemented in technological advancements and industrial applications. These papers reflect the current state of applied physics and points towards future directions in the field, serving as a valuable resource for researchers, scientists and industry professionals.

The VII International Conference on Applied Physics, Information Technologies and Engineering (APITECH-VII 2025) was held on February 14-15, 2025, in Bukhara, Uzbekistan.

This volume of EPJ Web of Conferences contains the proceedings of this prestigious event, which brought together researchers and from seven countries: Uzbekistan, Israel, Malaysia, Belarus, Kazakhstan, Russia, and South Korea.

The conference focused on urgent developments in applied physics and its interdisciplinary applications, covering three main sections:

1. Applied and Industrial Physics: This section explored fluid dynamics, thermodynamics, and mechanical systems. Presentations underlined innovative applications of physics principles in industrial spheres, demonstrating the practical impact of theoretical concepts on real-world engineering challenges.
2. Condensed Matter Physics, Materials Science, and Nanoscale Phenomena: Researchers presented innovative work in materials science, with a particular emphasis on nanoscale phenomena. This section showed how applied physics is

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driving advancements in the development of novel materials and their applications in various industries.

3. **Quantum Physics, Optics, and Electromagnetic Phenomena:** The conference featured important research in quantum physics and its applications in optics and electromagnetic systems. Presentations in this section demonstrated the potential of quantum technologies in revolutionizing fields such as communication and sensing.

A distinguished highlight was the session on applied physics in industrial spheres, which featured particularly engaging presentations. Speakers demonstrated how fundamental physics principles are being leveraged to solve complex engineering problems across various sectors, from energy production to advanced manufacturing processes.

The conference maintained a strong focus on applied physics throughout all presentations and papers. This emphasis emphasised the practical relevance of the research presented, showing how theoretical physics concepts are being implemented in technological advancements and industrial applications.

The selection process for included papers was rigorous and comprehensive. Each submission underwent a strict peer-review process, evaluated based on criteria such as scientific merit, originality, relevance to the conference themes, and potential impact on the field. The reviewers from Uzbekistan, Serbia, Italy, Turkey, China and other countries were strict evaluating the papers. Many papers were returned to authors for revisions following initial reviews, ensuring the highest quality of content.

All submissions were subjected to a thorough plagiarism check using iThenticate software, guaranteeing the originality of the presented work. As a result of this selection process, only the best and innovative papers have been included in this proceedings volume, representing the advances of applied physics research and its practical applications.

This collection of papers not only reflects the current state of applied physics but also points towards future directions in the field, making it a helpful resource for researchers, industry professionals, and scientists.