

Energy, Environment and Sustainable Materials

The second International Congress on Energy and Industrial Processes Engineering (ICEIPE'24) USTHB, Algiers, 14–16 May 2024

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Preface

We are pleased to present the Book of Proceedings *Energy, Environment and Sustainable Materials* of the 2nd International Conference on Energy and Industrial Process Engineering (ICEIPE'24), held in Algiers, Algeria, from May 14 to 16, 2024. Organized by the Laboratory of Valorization and Recycling of Materials for Sustainable Development (VRMDD), this biennial event brought together leading researchers and industry experts to tackle critical issues in energy, the environment, and industrial process engineering.

The six core themes of ICEIPE'24 — Energy Conversion and New Energies, Food Safety and Health, Extraction and Formulation Processes, Water Treatment Technologies, Environmental Treatment Processes, and Materials Recovery and Recycling — are strategically aligned with Algeria's national development priorities. The focus on renewable energy, for example, supports the country's Energy Security program, which aims for a 27% share of renewables in national electricity production by 2030. Similarly, the themes of food and water security address pressing challenges for Algeria's socioeconomic development. In this context, research and innovation are essential drivers of industrial competitiveness, wealth diversification, and the valorization of local expertise. They also underpin the development of integrated water resource management strategies and innovative treatment technologies for water reuse.

ICEIPE'24 provides a dynamic platform for presenting advanced research, with three plenary sessions, nine thematic symposia, and 285 selected contributions (oral presentations, posters, and e-posters) out of over 400 submissions — highlighting the scientific quality and rigor of the event. This edition also offers participants the exceptional opportunity to publish for free in a Book of Proceedings *Energy, Environment and Sustainable Materials* in a new series *DesBooks: Desalination, Water and Brine* published by Balaban Desalination Publications established by Miriam Balaban.

We believe ICEIPE'24 serves as a catalyst for innovation and collaboration, driving progress in sustainable energy, industrial technologies, and resource management. We invite you to explore these book and discover the cutting-edge research shaping a more sustainable future.

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