

Overview of the IV International Conference on Agricultural Engineering and Green Infrastructure for Sustainable Development (AEGISD-IV 2024)

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Abstract. The overview describes the main directions and results of the IV International Conference on Agricultural Engineering and Green Infrastructure for Sustainable Development (AEGISD-IV 2024) held in Tashkent on 28-30 March 2024. It gives the details about the participants and the proceedings.

The Volume contains Proceedings of the IV International Conference on Agricultural Engineering and Green Infrastructure for Sustainable Development (AEGISD-IV 2024). The event hosted by National Research University “Tashkent Institute of Irrigation and Agricultural Mechanization Engineers” took place on 28-30 March 2024 in Tashkent, Uzbekistan.

The Conference was an event that brought together experts, researchers, and professionals in the field of agricultural engineering, biotechnologies and sustainable development. The AEGISD-IV 2024 conference provided a platform for participants to discuss and share their research findings, experiences, and ideas on the latest developments and challenges related to agricultural engineering and green infrastructure for sustainable development.

The Conference was held with the support of scientists of Iowa State University, North Dakota State University and The Ohio State University (USA), Ondokuz Mayıs University and the Association of Ecological Agriculture Organization (Turkey), University Technology Malaysia (Malaysia), Angel Kanchev University of Ruse (Bulgaria), Bangladesh Agricultural University (Bangladesh), S.Seifullin Kazakh Agro Technical University and South Kazakhstan University named after M. Auezov (Kazakhstan).

The Program Committee and Editorial Board included prominent professors and scientists from Uzbekistan, Turkey, the USA, Bulgaria, Malaysia, Kazakhstan, Bangladesh.

The conference program included six main directions that covered a wide range of topics:

Agricultural Machinery and Power Units, Green Energy Systems: this section focused on the development and application of agricultural machinery and power units, as well as green energy systems for sustainable agriculture. Topics covered in this section included renewable energy sources, energy-efficient machinery, and precision agriculture.

Biosystems Engineering and Waste Management: the section examined the engineering aspects of biological systems and waste management in agriculture. The reports included bioremediation, waste-to-energy systems, and biodegradation of agricultural waste.

Digital Technologies and Automation in Agriculture: the section explored the role of digital technologies and automation in modern agriculture including precision agriculture, smart farming, and the use of drones and robotics in agriculture.

Food Storage, Processing and Preservation: the section focused on the engineering and technological aspects of food storage, processing, and preservation. The reports and papers of participants reflected the aspects of food safety, food processing technologies, and post-harvest management.

Biotechnology for Sustainable Soil Management, Geotechnical Engineering and Natural Resource Conservation: this section was devoted to the use of biotechnology for sustainable soil management, geotechnical engineering, and natural resource conservation. Topics included soil bioremediation, biotechnology for natural resource conservation, and geotechnical engineering for sustainable development.

Green Infrastructure for Sustainable Development: the section explored the role of green infrastructure in promoting sustainable development. The reports included green infrastructure design, green roofs and walls, and sustainable urban planning.

The International Conference on Agricultural Engineering and Green Infrastructure for Sustainable Development (AEGISD-IV 2024) was a significant event for the agricultural and biotechnology engineering, sustainable development community in Uzbekistan and in other Asian countries.

Scientists and practitioners from Uzbekistan and abroad submitted almost 280 manuscripts. All the papers were peer-reviewed. As a result, about 100 best papers were selected for publication. The proceedings present to the readers the recent advances in the field of agricultural machinery, green energy systems; biosystems engineering and waste management; digital technologies in agriculture; food storage and processing; tillage and reclamation technologies; natural resources.

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