

NURER 2026

ALMATY, KAZAKHSTAN • ONLINE TECHNICAL PROGRAM • SEPTEMBER 11, 2026 • ALMATY TIME (UTC+5)

08:50 - 09:30	KEYNOTE SPEECH Prof. Dr. Erdal Irmak <i>(Gazi University, Türkiye)</i> Title: <i>Enabling the Renewable Energy Transition through Smart and Flexible Power Grids</i>
09:30 - 11:30	SESSION I - Energy Systems & Emerging Technologies
11:30 - 11:45	COFFEE BREAK
11:45 - 13:30	SESSION II - Fusion, Nuclear Materials & Reactor Physics
13:30 - 14:00	LUNCH
14:00 - 15:45	SESSION III - Nuclear Reactors, Safety & Fuel Cycle
15:45 - 16:00	COFFEE BREAK
16:00 - 18:30	SESSION IV - Artificial Intelligence & Energy Systems

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SESSION I | 09:30 - 11:30

Energy Systems & Emerging Technologies

Session Chair: Gulnur Tyulepberdinova

#135 MALAYSIA	Autonomous Multi-Robot Coordination Systems for Disaster Response and Search-and-Rescue Operations Wai San Leong, Wai Yie Leong
#134 MALAYSIA	Integrated Edge Intelligence Systems for Real-Time Decision Making in Autonomous Engineering Applications Yuan Zhi Leong, Wai Yie Leong
#17 MALAYSIA	Hydrogen Production from Renewable Energy for Long-Duration Energy Storage Systems Wai Yie Leong
#94 CHINA	Large Eddy Simulation and Geometric Optimization of Flow Field in Fuel Rod Bundle Jixin Liu, Hongyang Wei, Puzhen Gao, Sichao Tan, Masroor Ahmad
#15 MALAYSIA	Lifecycle Sustainability and Waste Management in Nuclear-Renewable Integrated Energy Systems Wai Yie Leong
#133 MALAYSIA	Integrated IoT-Based Smart Water Management Systems for Urban Water Sustainability in Malaysian Cities Yuan Zhi Leong, Wai Yie Leong
#56 BANGLADESH	Ensemble-Driven Modeling of Global Isotopic Cross Sections with High-Fidelity Evaluation of Structural Fusion Reactor Materials Mustofa Khalid Ovi, Mst. Ummey Habiba Musfika, Md. Salman Shamil, Kamrul Hasan Nayem, Sneha Islam Mim, Md. Tamim Ikbal, Sinthya Bashar, Khandaker Mohammad Mohi Uddin
#105 KAZAKHSTAN	Optimization of the Electrical and Thermal Characteristics of a Hybrid PV/T System Based on CuO-ZnO Nanofluid Zhadyra Zhumasheva, Gulsim Mankeyeva, Murat Kunelbayev, Elmira Nazarova, Damir Zhangabergen, Serik Tolenov, Birlik Sagitzhanov, Ali Tynymbayev
#23 KAZAKHSTAN	Modular Dual-Circuit Indirect Heating Solar Thermal Installation with Flat Collectors, Plate Heat Exchanger and Battery Tank Murat Kunelbayev, Gulnur Tyulepberdinova, Gulshat Amirkhanova
#116 TURKIYE	Thermo-Fluid Assessment of Gyroid TPMS Heat Exchangers for Molten Salt Reactor Systems Mehmet Ümit Kahraman, Güven Tunç, Ömür Akbayır, Hacı Mehmet Şahin
#162 TURKIYE	CFD Evaluation of the Thermal-Hydraulic Performance of Molten Salt Shell-and-Tube Heat Exchangers with Different Numbers of Baffles Hacı Mehmet Şahin, Burak Türköz

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SESSION II | 11:45 - 13:30

Fusion, Nuclear Materials & Reactor Physics

Session Chair: Mustofa Khalid Ovi

#66 BANGLADESH	Experiment-Resolved Evaluation and Residual-Learning Correction of Neutron-Induced Dosimetry Reactions: A Comparative Study of $^{56}\text{Fe}(\text{n}, \text{p})^{56}\text{Mn}$ and $^{58}\text{Ni}(\text{n}, \text{p})^{58}\text{Co}$ Mustofa Khalid Ovi, Mst. Ummey Habiba Musfika, Md. Salman Shamil, Kamrul Hasan Nayem, Tanver Hossain Refat, Md. Tamim Ikbāl, Sinthya Bashār, Khandaker Mohammad Mohi Uddin
#44 BANGLADESH	Analytical Residual Topology and Systematic Bias Decomposition in Evaluated Nuclear Cross Sections: A Transfer-Constrained Mathematical Framework for Chromium Isotopes Mustofa Khalid Ovi, Mst. Ummey Habiba Musfika, Md. Salman Shamil, Kamrul Hasan Nayem, Sneha Islam Mim, Md. Tamim Ikbāl, Sinthya Bashār, Khandaker Mohammad Mohi Uddin
#50 TURKIYE	Assessment of SoC Estimation Methods for a Fuel Cell/Battery Hybrid Electric Vehicle During the WLTP Driving Cycle Kubra Nur Akpınar, Bugra Yılmaz, Baris Cavus, Secil Genc
#67 TURKIYE	Quantum Homodyne Analysis of Molecular Dynamic Simulation of TiB_2 Crystal with Deuterium Plasma Interaction Alper Pahsa
#79 TURKIYE	Comparison of Corrosion in Fluoride and Chloride-Based Salts for Nuclear Applications Atalay, U., Tunç, G., Şahiner, H., Şahin, H. M.
#181 TURKIYE	Neutronic Analysis of $\text{NaCl-ThCl}_4\text{-PuCl}_3$ Fuel for Dual Fluid Reactors Semra Daydas, Ali Tiftikci
#149 UKRAINE	A Systems Approach to the Design of an Adaptive Sensor Field for Radiological Situation Monitoring at Nuclear Energy Facilities in Combat-Affected Zones Serhii Chumachenko, Maksym Sukalo, Levon Petrosian, Volodymyr Kuzmenko
#35 KAZAKHSTAN	Improving the Energy Efficiency of Photovoltaic-Powered Drip Irrigation: Analysis of Pressure Losses and SEC Zhanar Yeraliyeva, Murat Kunelbayev, Sholpan Tletay

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SESSION III | 14:00 - 15:45

Nuclear Reactors, Safety & Fuel Cycle

Session Chair: Hüseyin Şahiner

#59 INDIA	A Conceptual Reactor Design for Future Generations of The Millenium V. Jagannathan, Suhail Ahmad Khan, L. Thilagam
#144 RUSSIA	Assessment of the Applicability of Alkaline and Carbonate Media in Hydrometallurgical Processing of Dispersion Uranium-Silicide Spent Nuclear Fuel Dmitriy R. Subbotin, Alexander V. Boyarintsev, Sergey I. Stepanov, Anastasia G. Koptyaeva, Sergei V. Artobolevskii, Lyubov N. Podrezova, Andrey Yu. Shadrin
#188 IRAN	A Coupled Monte Carlo-Deterministic Approach for Neutronic Analysis of the Molten Salt Reactor Experiment Sajjad Hasanpoor, Kamal Hadad, Ahmad Pirouzmand, Sümer Şahin
#153 TURKIYE	Sensitivity and Uncertainty Analyses for a Fast Molten Salt Reactor Sevval Kaplan, Huseyin Sahiner
#155 UKRAINE	Using the Area Ratio Method for Reactivity Measuring of the Subcritical Nuclear Facility "Neutron Source" I. Karnaukhov, A. Zelinsky, I. Ushakov, V. Bykov, P. Gladkih, A. Mytsykov
#36 ITALY	Cost Modeling in the Back-End of the Nuclear Fuel Cycle: A Data-Driven DEMATEL and Shapley-Based Approach Francesco Ventura, JR James, Giuseppe Caristi, David Barilla, Daniela Barba
#62 GERMANY	Backward Causal Inference on Nuclear Knowledge Graphs: Domain-Specific Entity Resolution, Fault Path Discovery and Blind Accident Prediction David Tom Foss
#63 GERMANY	Spectral Signatures of Pseudo-Random Number Generators in Nuclear Monte Carlo Codes: Detection via Markov Transition Analysis and Compression-Based Exchangeability Testing David Tom Foss
#74 MOROCCO	Assessing the Potential Role of Small Modular Reactors in Morocco's Future Electricity System Karim El-Assefry, Karim Choukri, El Mahjoub Chakir

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SESSION IV | 16:00 - 18:30

Artificial Intelligence & Energy Systems

Session Chair: Ugur Atalay

#132 INDIA	Atmospheric Effects on Thermoradiative Energy Conversion for Renewable Power Generation Kousikan K. J., K. S. Reddy
#154 KAZAKHSTAN	An Intelligent Control System for a Dual-Loop Solar Installation with Thermosiphon Circulation Based on Artificial Intelligence Methods Elmira Nazarova, Zhadyra Zhumasheva, Gulsim Mankeyeva, Murat Kunelbayev, Ablay Yerallyev, Damir Zhangabergen, Serik Tolenov, Birlik Sagitzhanov, Ali Tynymbayev, Akerke Sultanmurat
#29 KAZAKHSTAN	Inverter Converter as an Element of the Digital Twin of the Energy-Technological Subsystem of a Bakery Production Line Gulshat Amirkhanova, Bauyrzhan Amirkhanov, Murat Kunelbayev, Nazly Yusubova
#146 KAZAKHSTAN	Development and Performance Evaluation of a Dual-Loop Solar Hot Water Supply System with a Vacuum Tube Collector, a Phase-Change Heat Exchanger and Automated Control Ablay Yerallyev, Zhadyra Zhumasheva, Gulsim Mankeyeva, Murat Kunelbayev, Elmira Nazarova, Damir Zhangabergen, Serik Tolenov, Birlik Sagitzhanov, Ali Tynymbayev, Akerke Sultanmurat
#38 GEORGIA	Hydrogen Sorption Capacity of Yttrium-Based Intermetallic Compounds in the Context of the Quantum-Mechanical Theory of Proton Transfer Grigor Tatishvili, Gulnara Kipiani, Manana Gachechiladze, Marine Khutsishvili, Natela Ananiashvili, Lia Abazadze, David Gventsadze, Marine Avaliani, Lela Kvinikadze
#47 TURKIYE	Application of an ANN-Based Wind Speed Forecasting Model for İzmir, Turkey İdil Ece Cevahir, Beyza Şahin, Levent Bilir
#145 TURKIYE	Gyroid TPMS Heat Exchangers for Molten Salt Applications: Performance and Compatibility İlayda Uzunlu, Hacı Mehmet Şahin
#107 UNITED KINGDOM	Short-Horizon Grid Frequency Forecasting Using Hybrid Machine Learning Models with a Frequency-Aware Demand-Response Action Layer Elohor Ekurume, Triantafyllos Kanakis, Michael Opoku-Agyeman
#98 MOROCCO	A Multi-Horizon Benchmark of Foundation and Neural Models for Univariate Moroccan Solar and Wind Forecasting Mohamed Ballouch, Omar Souissi, Mohammed Raiss El-Fenni
#170 SENEGAL	CFD Analysis of a Multi-Effect Solar Distillation System in Sub-Saharan Africa Climatic Condition Serigne Thiao, Saly Diatta, Awa Mar, Oumar Drame, Mamadou Sow
#163 USA	Machine Learning-Driven Framework for Atmospheric Stability Prediction Using Off-Site Meteorological Data Ben Sonpon, Shoaib Usman, Joseph Smith, Huseyin Sahiner
#169 KAZAKHSTAN	Calculated Thermal Modeling and Efficiency Analysis of a Thermosiphon Solar Water Heating System Gulsim Mankeyeva, Z. Zhumasheva, M. Kunelbayev, A. Yerallyev, Gulnur Tyulepberdinova, D. Zhaisanova, D. Rakhman
#109 CHINA	Regulating High-Temperature Radiative Flux for Efficient Solar Photothermal Conversion Sahil Orangzeb, Bachirou Guene Lougou, Edward Dintwa, Jian Wu, Yong Shuai
#28 INDIA	Artificial Intelligence-Driven Optimization of Green Hydrogen Production in Hybrid Solar-Wind Electrolysis Systems Jayabhaduri Radhakrishnan, V. Vivek, Shekhar R.
#84 RUSSIA	Reduction of the hydrogen oxidation mechanism using ther-modynamic analysis Alexander A. Molokanov, Weixing Zhou, Qili Ai, Yu Luo, Vladimir G. Matveev, Nikolay A. Plishkin, Leonid S. Yanovskiy