

7th International Conference on Nuclear and Renewable Energy Resources (NURER2024)

Antalya, Turkiye
27-30 October 2024

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NURER 2024 –PROGRAMME
7TH INTERNATIONAL CONFERENCE ON NUCLEAR AND RENEWABLE
ENERGY RESOURCES

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27 Oct 2024 Sunday		
15:30-20:30 Registration		
28 Oct 2024 Monday		
08:00-09:00 Registration		
Opening Session		
09:00 - 09:15	Prof. Dr. H. Mehmet Şahin (Chairman)	
09:00 - 09:15	Prof. Dr. Sümer Şahin (Honorary Chairman)	
Plenary Session 1 (Hall A) Chairman: Rizwan Uddin		
09:15-10:00	Introduction to accelerator-driven systems: the power and promise of renew	Jean-Pierre Revol
10:00-10:40	Problems and solutions in the field of geothermal energy sector	Yunus Çengel
10:40:11:20	AEA platform on SMRs and their applications	Dohee Hahn
11:20 – 11:40 Coffe Break		
Session 1 (Hall A) Small Modular Reactors		Chairman: Virginie Cartier
11:40-12:00	Analysis of SBO sequences in a Small Modular Reactor using the TRACE code	Jorge Arrabal David Canal Cesar Queral
12:00-12:20	Probabilistic risk assessment of Molten Salt Reactors: Evaluating safety systems and reliability	Ümmühan Barlak Husevin Sahiner
12:20-12:40	Radiological consequences of the SMRs - first steps towards deployment	Adam Kecek
12:40-13:00	LOCA sequence analysis in NuScale SMR with TRACE code	Yago Martinez-Gonzalez Jorge Sanchez-Torrijos Cesar Queral
13:00-14:00 Conference Photo and Lunch		
Plenary Session 2 (Hall A) Chairman: Victor Hugo Sanchez-Espinoza		
14:00-15:00	Status of SMR and advanced reactors supply-chain, economic impact and licensing requirement for participation	Shoaib Usman
Session 2 (Hall A) Simulations of Nuclear Reactors		Chairman: Jean-Christophe de Mestral
15:00-15:20	Simulation of MOTEL experimental tests MS-SG01 and MS-SG02 using TRACE code	Yago Martinez-Gonzalez Cesar Queral Elena Redondo-Valero Jorge Sanchez-Torrijos
15:20-15:40	Mitigating recirculation zones in molten salt fast reactor models	Ismail Yagci Zekeriya Parlak Huseyin Sahiner
15:40-16:00 Coffee Break		
Session 3 (Hall A) Renewable Energies and Applications		Chairman: Shoaib Usman
16:00-16:20	Influence of reduced graphene oxide on anode functional layer performance in Solid oxide fuel cells	Furkan Toruntay
16:20-16:40	Characterization of microstructure and corrosion properties of powder metallurgy Ti-Al-Sn-Zr-Mo alloy for nuclear applications	Eda Ergün Songül İlven Mutlu
16:40-17:00	An Investigation on large scale green hydrogen production through electrolysis: Case study of AKKUYU nuclear power plant	Fethi Mustafa Çimen Saltuk Buğrahan Yeşilgöl
17:00-17:20	Design and assessment of the ARC fusion reactor integrated energy system to produce power and hydrogen	Sulenur Asal Adem Acır

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29 Oct 2024 Tuesday**Planary Session 3 (Hall A) Chairman: Adam Kecek****09:00-10:00 Transmutex Jean-Christophe de Mestral****Session 4 (Hall A) Analysis of VVERs Chairman: Cesar Queral**

10:00-10:20	KIT Investigations of the VVER-1000 plant behavior under design basis accidents	Victor Hugo Sanchez-Espinoza Nuri Beydogan Gianfranco Huaccho Zavala
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10:20-10:40	Analysis of the impact of passive safety systems on accidental sequences of VVER-1000 reactors.	Elena Redondo-Valero Cesar Queral Kevin Fernandez-Cosials
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10:40-11:00	Comparative analysis of accidental sequences with conventional and Advanced Tolerant Fuels (ATF) in VVER-1000 reactors	Elena Redondo-Valero Cesar Queral Jorge Sanchez-Torrijos Emilio Castro-Gonzalez
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11:00-11:20 Coffee Break**Session 5 (Hall A) Neutronic Analysis and Reactor Physics Chairman: Khurrum Saleem Chaudri**

11:20-11:40	Optimized fuel cycle and burnup analysis for pebble-bed reactors	Sefa Bektaş Volkan Seker Üner Çolak Thomas Downar
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11:40-12:00	Neutronic Study of a Molten Salt Uranium Mixture in a Fusion Reactor Blanket	H. Mehmet Sahin Güven Tunç Alper Karakoç
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12:00-12:20	Reactor physics analysis of accident tolerant fuel cladding system for 24-month cycle of APR-1400	Khurrum Saleem Chaudri Mohammad Alrwashdeh Saeed A. Alameri
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13:00-14:00 Conference Photo-2 and Lunch**Planary Session 4 (Hall A) Chairman: Jean-Pierre Revol**

14:00-14:40	Integration of multiple energy sources (including nuclear) and multiple uses in an optimally designed and optimally operated energy network	Rizwan Uddin
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Session 6 (Hall A) Nuclear Management Chairman: Hidemasa Yamano

14:40-15:00	International cooperation for nuclear management: an institutional framework	Mehmet Sahin Ömer Faruk Kocatepe
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15:00-15:20	Environmental impacts of energy production and alternatives	Huseyin Sahiner
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15:20-15:40	Tsunami flood protection - system	Jens Wieneke
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15:40-16:00	Role of nuclear-renewable hybrid energy systems – a case study of natriumtm energy system for power and hydrogen production	Hailei Wang
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16:00-16:40	Synthetic time series modeling and sensitivity study for robust techno-economic analysis of advanced nuclear energy systems	Hailei Wang
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16:40-17:00 Coffee Break**Session 7 (Hall A) Renewable-Hydrogen Technologies Chairman: Hailei Wang**

17:00-17:20	Hydrogen technology development during a revolutionary era in Europe	Virginie Cartier Elisabeth A. Cazier
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17:20-17:40	Long-term planning of power generation volumes for the Akkuyu nuclear power plant	Saltuk Buğrahan Yeşilgöl Fethi Mustafa Çimen
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17:40-18:00	Prediction of fuel variability impacts on the combustion characteristics of NH ₃ /H ₂ /N ₂ fuel mixtures using machine learning techniques	Israfıl Soyler Cihat Emre Ustun Amin Paykani Nader Karimi
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18:00-18:20	Numerical analysis of air-channel photovoltaic thermal collectors and evaluation of hydrogen production	Erdem Ciftçi Murat Öztürk
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18:20-18:40	Ultra-low NOx emissions and increased power in a	Berre Kumuk
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	combustor-SOFC System under CDC conditions	
19:30 GALA DINNER		
30 Oct 2024 Wednesday		
Session 8 (Hall A) Thermal-Hydraulic and Energy Storage Chairman: Gulnur Tyulepberdinova		
76	09:40-10:00	Safety design technologies for sodium-cooled fast reactor coupled to thermal energy storage system with sodium-molten salt heat exchanger <u>Hidemasa Yamano</u> Kazuya Takano Kenichi Kurisaka Shin Kikuchi Toshiki Kondo Masaaki Hayashi
100	10:00-10:20	Numerical simulation of underground hydrogen storage in a depleted gas reservoir: Effect of well configurations Emrah Sarı <u>Erdem Çiftçi</u>
123	10:20-10:40	Numerical simulation of thermal-hydraulic performance of staggered tube bank with longitudinal triangular fins <u>Mustafa Söyler</u>
10:40-11:00 Coffee Break		
Session 9 (Hall A) Renewable Energy and Applications Chairman: Farimehr Ghanizadeh Geraili		
145	11:00-11:20	Utilizing gamma-irradiated Iranian propolis (bee glue) extract for the synthesis of green silver nanoparticles <u>Farimehr Ghanizadeh Geraili</u> Seyed Mahmoud Reza Aghamiri Marzieh Heidarieh
166	11:20-11:40	Heat pump system of renewable energy sources utilization as a basis for the development of a digital twin <u>Gulshat Amirkhanova</u> Murat Kunelbayev Gulnur Tyulepberdinova Madina Mansurova Baurzhan Amirkhanov
133	11:40-12:00	Experimental studies of a double-circuit solar installation with thermosiphon circulation with a heat pump <u>Gulnur Tyulepberdinova</u> Murat Kunelbayev Gulshat Amirkhanova Ardak Tolepberdinova
12:00- 12:20 Planery Session 6 Closing Talk (Prof. Dr. H. Mehmet Şahin)		
13:00-14:00 LUNCH		