



الجمعية العلمية الملكية
Royal Scientific Society



Alexander von
HUMBOLDT
STIFTUNG

**First Middle East and North African-German Frontiers of Science and Technology (MENAGFOST)
Symposium on**

Frontiers of AI-Driven Industrial Transformation, Sustainable Technologies and Green Innovation

14 - 16 November 2026 in Amman, Jordan

Program

Saturday, November 14, 2026

8:00 – 08:15 Gathering at Hotel Reception

08:15 Bus Departure to the Royal Scientific Society

09:00 – 09:30 Opening Remarks

09:30 – 10:15 Speed Meeting

10:15 – 10:45 Presentations RSS and AvH

10:45 – 11:15 Coffee Break & Group Photo

11:15 – 13:30 Session I: Artificial Intelligence & Human-Centered Technologies

Session Chairs: Bushra Alhijawi, Princess Sumaya University for Technology, Jordan

Giang Nguyen, Dresden University of Technology, Germany

Speakers:

Artificial Intelligence and Societal Transformation in the Gulf: Human-Centered Innovation, Governance, and the Case of Saudi Arabia

Désirée Kaiser, University of Bonn, Germany

AI That Supports, Not Replaces: Human-Centered Optimization for Smarter Healthcare

Mohammad Abdel-Rahman, Princess Sumaya University for Technology, Jordan

Operationalizing AI in Healthcare Crises: A Human-Centered Approach to Emergency Care and Patient Safety

Fawzia Elsherif, Alexandria University, Egypt

Beyond the Fitts List: Rethinking Human Oversight in Safety-Critical AI Systems

Jonas Pöhler, Fraunhofer IAIS, German

13:30 – 14:30 Lunch at RSS

14:30 – 15:15 Poster Flash Talks – Part I

15:15 – 16:15 Poster Session I
(refreshments served at the posters)
16:15 – 16:45 Coffee Break
16:45 – 17:30 Poster Flash Talks – Part II
17:30 – 18:30 Poster Session II
(refreshments served at the posters)
Bus Transfer to Hotel

Sunday, November 15, 2026

8:00 – 08:15 Gathering at Hotel Reception
08:15 Bus Departure to the Royal Scientific Society
09:00 – 11:15 **Session II: Intelligent Manufacturing & Industrial Transformation**

Session Chairs:

Mohammed Abdelrahman Mohammed Ghorab, TU Berlin, Germany

Hussam Jihad Khasawneh, Al Hussein Technical University, Jordan

Speakers:

Beyond Connectivity: 6G and Quantum Technologies for Intelligent Industrial Systems

Bassem Arar, Dresden University of Technology, Germany

A Cross-Disciplinary Closed-Form Model Framework for Machining Process, Dynamics and Energy and Its Integration with Physics-Informed AI for Intelligent Machining Systems

Chigbogu Ozoegwu, Dresden University of Technology, Germany

Building Resilient Supply Chains: AI-Driven Cognitive Digital Twins for Real-Time Disruption Management

Islam Ali, Egypt-Japan University of Science and Technology, Egypt

Human Capital for the Twin Transition: Skills, Resilience, and Innovation for AI-Driven Sustainable Industrial Transformation

Nermin Mousa, Latakia University, Syria

11:15 – 11:45 Coffee Break

11:45 – 14:00 **Session III: Circular Economy, Green Chemistry & Sustainable Materials**

Session Chairs:

Jakob Albert, University of Hamburg, Germany

Mohamad Midani, German University in Cairo / NC State University, Egypt

Speakers:

Spectral Fingerprints for Circular and Sustainable Food Systems: Infrared Spectroscopy for Nutritional Profiling, Authenticity, and Quality Assessment

Ali Ali Redha, Leibniz University Hannover, Germany

Electrochemical Carbon Dioxide Reduction (eCO₂RR): A Pathway Toward a Sustainable Chemical Industry

Ahmad A. Almasalma, Alantum Europe GmbH, Germany

The Six-Legged Solution: Upcycling Organic Waste into Sustainable Protein and Bio-Fertilizer via Insect Biotechnology

Marwa Abdelhamid Ibrahim Hassan Shumo, Strategic Innovation Center L.L.C, Oman

From Lab Bench to Societal Impact: Bioengineered Nanomaterials for Precision Health and Sustainable Innovation

Samaa Abdullah, Applied Science Private University, Jordan

14:00 – 15:00 Lunch at RSS

15:00 – 16:30 RSS LAB & INNOVATION TOUR

Parallel Thematic Tracks

Laboratories in Full Operation

16:30 Transfer from RSS to City

17:00 – 19:00 Cultural Tour/Excursion

19:00 Dinner

Bus Transfer to Hotel

Monday, November 16, 2026

8:00 – 08:15 Gathering at Hotel Reception

08:15 Bus Departure to Royal Scientific Society

09:00 – 11:15 Session IV: Climate Resilience & Water-Energy-Food-Ecosystem "WEFE" Nexus Solutions

Session Chairs:

Almoayied Assayed, Environment and Climate Change Centre, Royal Scientific Society, Jordan

Mariana Madruga de Brito, Helmholtz Center for Environmental Research and Leipzig University, Germany

Speakers:

From Nexus Models to Deployable Decision Support: AI-Ready Optimization for Climate-Resilient Water-Energy-Food Systems in Arid Regions

Sa'd Abdel-Halim Shannak, Hamad Bin Khalifa University, Qatar

Making Forecasts Actionable, Together: Flood and Drought Early Warning Between Germany and MENA

Husain Najafi, Helmholtz Centre for Environmental Research – UFZ, Germany

A Nexus Perspective on Transformative Shifts in Bioeconomy Sectors: Integrating Artificial Intelligence and System Dynamics

Florian Siekmann, Forschungszentrum Jülich, Germany

Seawater Greenhouse Systems in Arid Coastal Regions: Deployment Barriers in the MENA

Masoud Dehghani-Soufi, Sultan Qaboos University, Oman

11:15 – 11:45 Coffee Break

11:45 – 13:00 Collaboration Pitch Session

13:00 – 13:45 Matchmaking & Exchange on Collaboration Ideas

13:45 – 14:00 Follow-up Activities & Outcome Document

14:00 – 14:15 Closing Remarks

14:15 – 15:30 Farewell Lunch

Bus Transfer to Hotel