PANEL 4.1: Challenges and opportunities for the promotion of nuclear science and technology

Chairman, Jordan Atomic Energy Commission

Khaled Toukan has been President of Al-Balqa Applied University, then Jordan’s Minister of Education, Minister of Higher Education and Scientific Research and Minister of Energy and Mineral Resources; currently, he is Chairman of the Jordan Atomic Energy Commission and Director of the Synchrotron-light for Experimental Science and Applications in the Middle East (SESAME) Center.
Towards an IAEA Center of Excellence for Regional Cooperation in Nuclear Science & Applications in the Middle East

Dr. Khaled Toukan
Chairman, Jordan Atomic Energy Commission
Jordan Research & Training Reactor (JRTR)
1st Full Production - September 2017
From Theory to Reactor Experiments

Theory → Data Collection → Analysis → Conclusion
Synchrotron-light for Experimental Science and Applications in the Middle East (SESAME)

SESAME Building

Inside Experimental Hall
SESAME Members and Observers

- **Members:**
  Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, Palestine, Turkey.

- **Observers:**
  Brazil, Canada, China, CERN, EU, France, Germany, Greece, Italy, Japan, Kuwait, Portugal, Russia, Spain, Sweden, Switzerland, UK and USA.
In July, the first users arrived at SESAME to perform experiments using the Center’s XAFS/XRF (X-ray Absorption Fine Structure/X-Ray Fluorescence) spectroscopy beamline, SESAME’s first beamline to come into operation.
IAEA’ s Role

SESAME:
Through a series of three interregional projects over the past ten years, the IAEA has been providing technical cooperation support including:

- Capacity Building (66 fellows trained, 30 meetings convened and 43 expert missions).
- Safety Review of SESAME.
- Working with TC to construct a MS beamline on co-funding basis.
- TC support is now focusing on expanding the Users Community.

JRTR:

- Building human capacity at the JRTR (20 fellows trained since 2009).
- INSARR missions to review the results of the commissioning program and the routine operation of the reactor.
- Assistance through national TC projects, in design, commissioning and licensing the neutron radiography beamline, high resolution powder diffractometer and assessing the current status of the NAA facility.
SESAME & JRTR should be viewed as a Center of Excellence for regional cooperation in nuclear science and technology.

Photons (SESAME) and Neutrons (JRTR) are complimentary in probing materials in several important fields covering fundamental, basic and applied research.

These two state-of-the-art facilities offer a unique regional hub for photon and neutron science and applications.

IAEA’s support is sought to recognize this hub, develop synergism, attract fellows, researchers and users from the ME region and beyond.
Thank you