



# IAEA

International Atomic Energy Agency

*Atoms for Peace*

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## ***SESAME: Synchrotron-light for Experimental Science and Applications in the Middle East***

### ***The challenge...***

Synchrotron facilities – huge electron accelerators that generate intense beams of light, from infrared to X ray – support research and development that feeds advances in medicine, physics and other fields. The SESAME initiative was established as a follow-up to the World Conference on Science convened by UNESCO in Budapest in 1999, in conjunction with the International Council for Science. The SESAME Centre, in Allan, Jordan, aims to improve basic and applied research in the Middle East, in fields that affect everyday life. SESAME's centrepiece will be a 2.5 GeV compact high performance light source machine, capable of generating intense light beams for advanced scientific and technical research.



*SESAME's microtron.*

### ***The project...***

Through an interregional technical cooperation project, the IAEA is helping to train future SESAME users and operators in the safe and secure commissioning and operation of the SESAME facility, through fellowships, scientific visits and expert missions. This ensures that all relevant capabilities will be in place once the Centre is commissioned. In addition, IAEA staff serve on selection panels for scientific fellowships and participate in users' meetings that promote the SESAME community throughout the region.

These and other activities take place within the framework of the IAEA-SESAME memorandum of understanding, signed in December 2006. The IAEA participates as an observer in the SESAME Council meetings.

### ***The impact...***

When the SESAME Centre opens in 2014, it will provide a home for the research now carried out at multi-GeV rings located outside the region. Planned programmes include molecular environmental science, surface and interface science, archaeological microanalysis, materials characterization and clinical medical applications.

As the region's first major international research centre, SESAME will contribute to regional scientific, technical and economic development, and will be a focal point through which scientific collaboration will be strengthened. The Centre will be jointly operated and supported by the SESAME Member States, with additional support provided by other countries interested in promoting the peaceful development of science and technology in the Middle East.



*The SESAME Centre in Allan, Jordan.*

*INT/1/055: Support for Human Capacity Building in the Utilization and Operation of the Synchrotron-light for Experimental Science and Applications for the Middle East (SESAME)*