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SESAME Success Continues Despite Difficulties

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SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East) is a third generation 2.5 GeV synchrotron-light source under construction near Amman (Jordan), modelled on CERN and established under the auspices of UNESCO. The Members of SESAME are currently Bahrain, Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, the Palestinian Authority and Turkey. Observer countries are Brazil, China, France, Germany, Greece, Italy, Japan, Kuwait, Portugal, Russian Federation, Spain, Sweden, Switzerland, UK, and USA. Jordan was selected as the seat of the project in April 2000 and SESAME became a center operating under the auspices of UNESCO in May 2002 and developed to an independent multinational research organization in April 2004.

SESAME has faced many difficulties since its start. Most of the difficulties were financial; however some were also political and technical. Despite all difficulties, SESAME managed to move forward on constructing the machine and building staff capacity. SESAME building was completed in 2007 and commissioned in November 2008. The shielding tunnel that would host all the three accelerators was completed in April 2011. The first beam was produced from the microtron at 22 MeV in November 2011. The cooling and vacuum system were completed in March 20013. Despite the severe accident of roof collapse due to unprecedented snow fall in mid-December 2013, a 20 MeV beam was stored in the booster in July 2014. On the 3rd September, 2014 the SESAME team succeeded in accelerating the electrons in the booster to their final energy of 800 MeV. This makes SESAME booster the first high-energy accelerator in the Middle East.

Storage ring magnets are being manufactured with help from CERN and a €5 million donation from the European Commission. Four RF cavities are currently manufactured at ELETTRA which will be partly paid for by a €1 million donated by Italy. SESAME is expected to go on operation early 2016 with 4 day-one beamlines.

SESAME achievements can be attributed to the high skills of its staff from several countries and the help and support SESAME is receiving from several light source laboratories around the world. Many laboratories and international organizations helped in staff capacity building, donation of equipment, parts, complete beamlines and expertise.

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