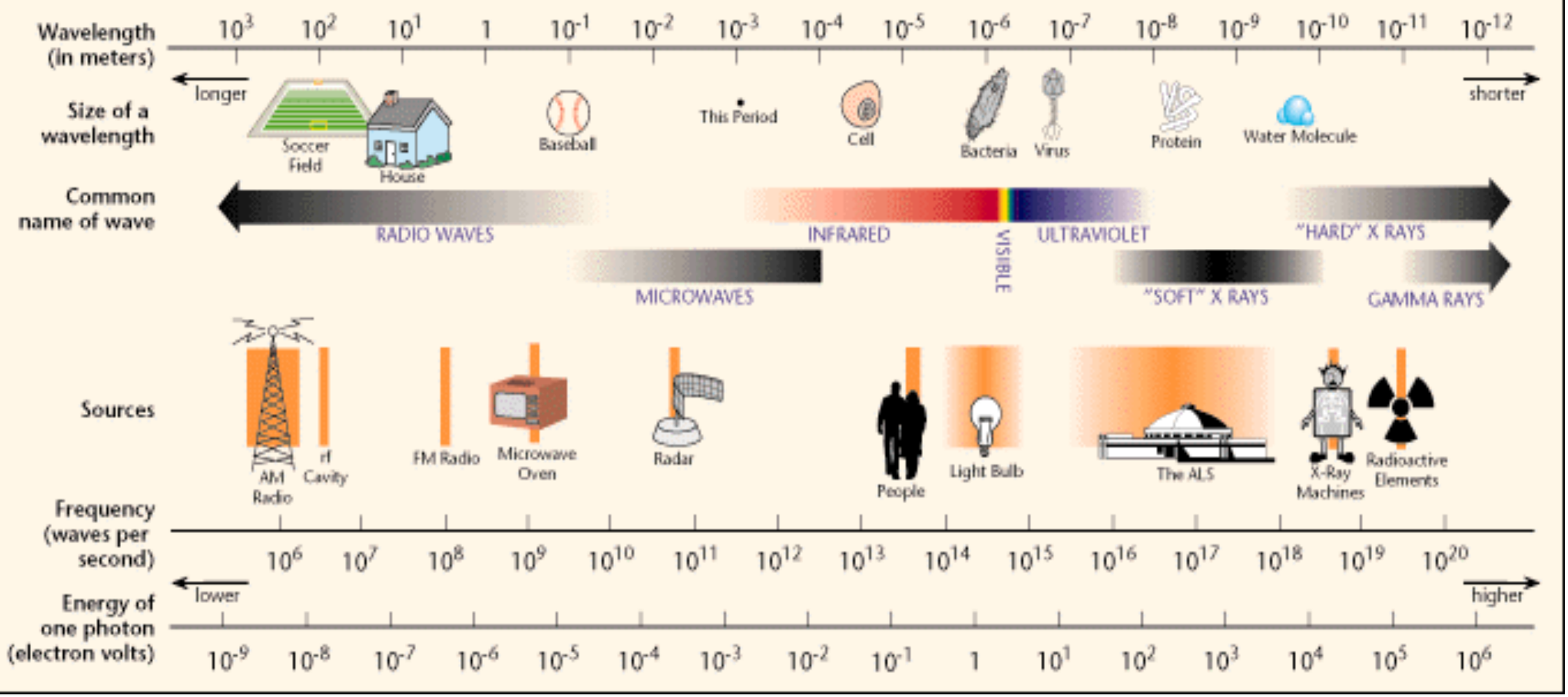
SESAME

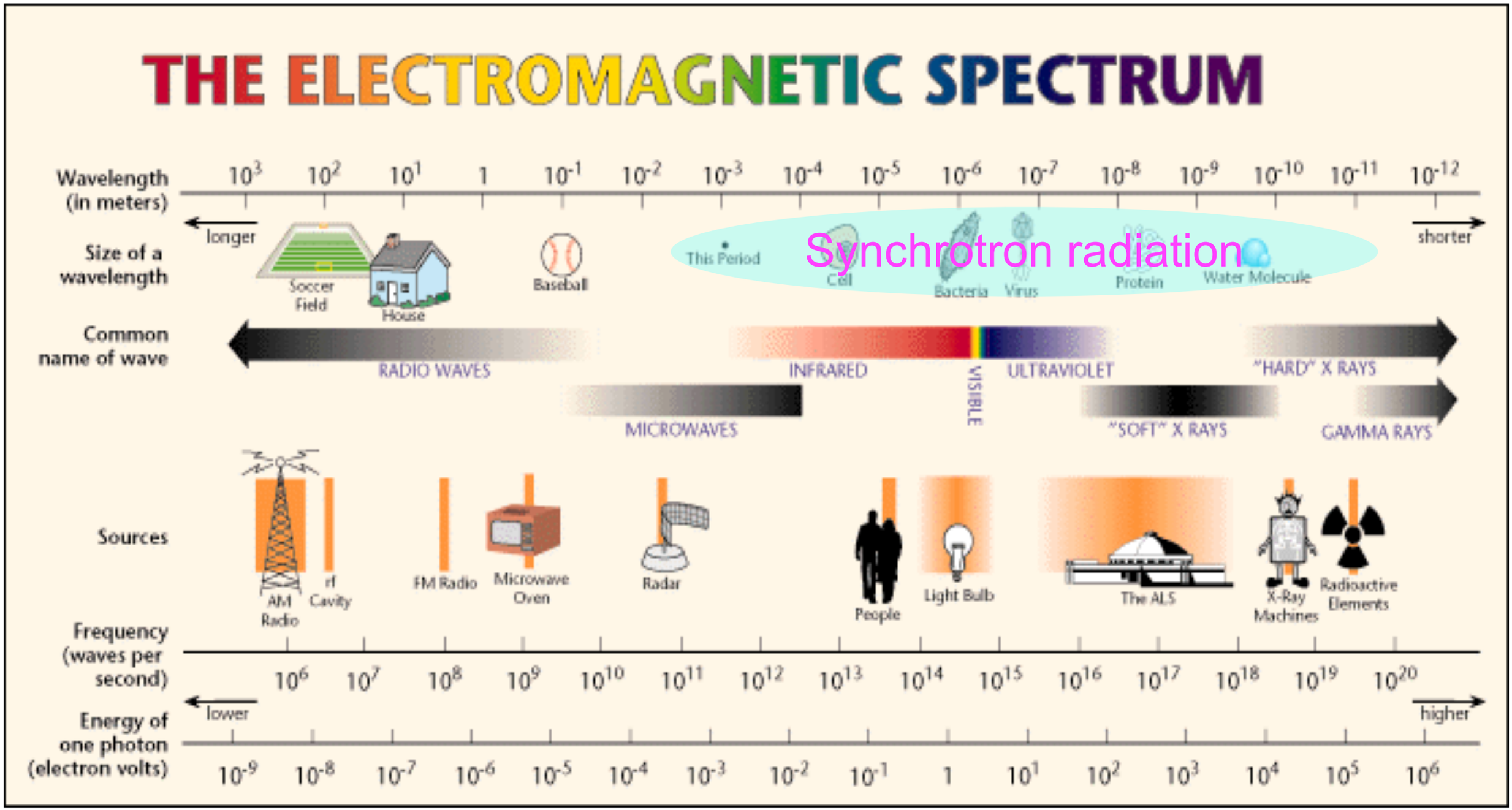
Synchrotron-light for Experimental Sciences and Applications in the Middle East

SESAME: Science for peace

Giorgio Paolucci
Scientific Director - SESAME

THE ELECTROMAGNETIC SPECTRUM




THE ELECTROMAGNETIC SPECTRUM
Wavelength (in meters)
10^3 10^2 10^1 1 10^{-1} 10^{-2} 10^{-3} 10^{-4} 10^{-5} 10^{-6} 10^{-7} 10^{-8} 10^{-9} 10^{-10} 10^{-11} 10^{-12}
longer
shorter
Size of a wavelength
Soccer Field
House
Baseball
This Period
Cell
Bacteria
Virus
Protein
Water Molecule
Synchrotron radiation
Common name of wave
RADIO WAVES
MICROWAVES
INFRARED
VISIBLE
ULTRAVIOLET
"SOFT" X RAYS
"HARD" X RAYS
GAMMA RAYS
Sources
AM Radio
rf Cavity
FM Radio
Microwave Oven
Radar
People
Light Bulb
The ALS
X-Ray Machines
Radioactive Elements
Frequency (waves per second)
10^6 10^7 10^8 10^9 10^{10} 10^{11} 10^{12} 10^{13} 10^{14} 10^{15} 10^{16} 10^{17} 10^{18} 10^{19} 10^{20}
lower
higher
Energy of one photon (electron volts)
10^{-9} 10^{-8} 10^{-7} 10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1} 1 10^1 10^2 10^3 10^4 10^5 10^6

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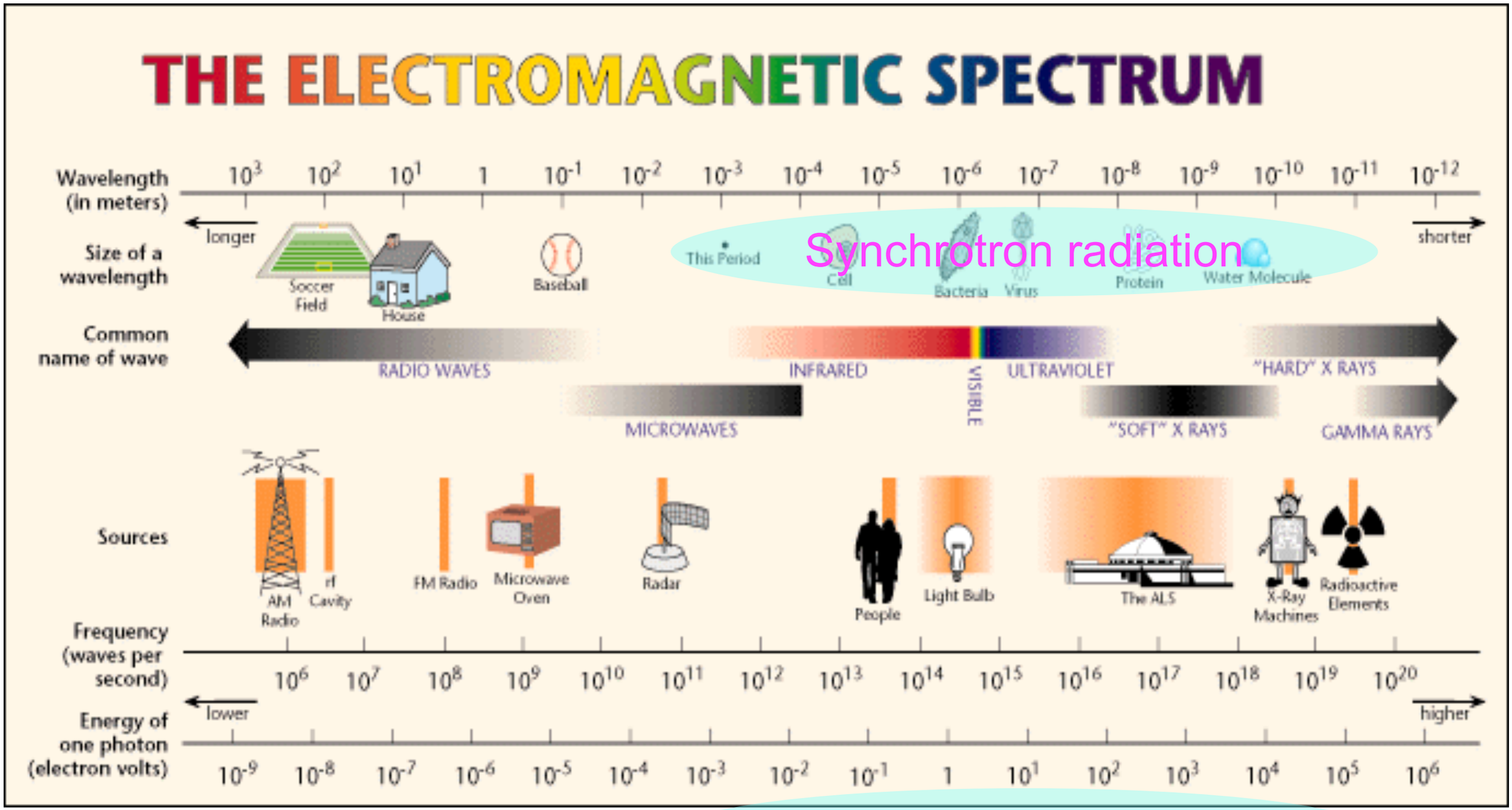
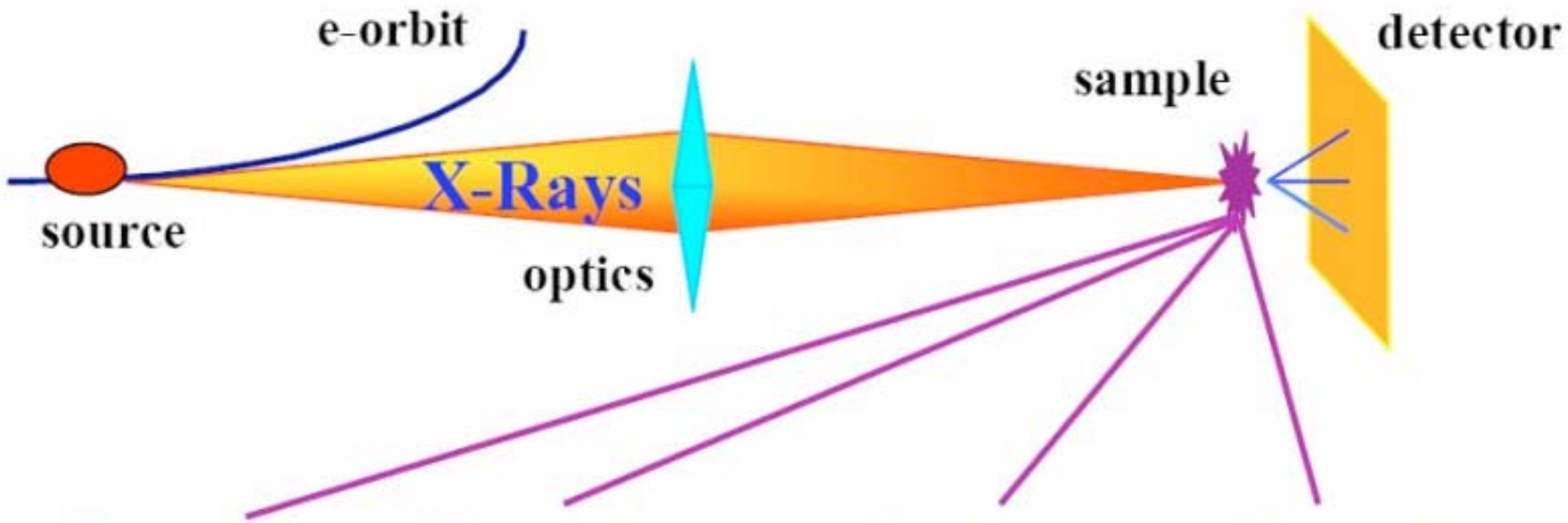


Synchrotron radiation

Generic SR experiment



Energy	Momentum	Position	Dynamics
Spectroscopy	**Scattering**	**Imaging**	**Time-resolving**
EXAFS	MAD	Microscopy	Diffraction
XANES	SAD	Tomography	Luminescence
Fluorescence	SAXS	Topography	Spectroscopy
Spectromicro-scopy	XMS	Phasing	Scattering
	Interferometry	Litography	Imaging

Europe in the 40s built CERN

Europe in the 40s built CERN

Europe in the 40s built CERN

Europe in the 40s built CERN

Scientists from previously enemy countries working together, as well as scientists from the two sides of the iron curtain.

A CERN for the Middle East?

A CERN for the Middle East?

A group of visionary scientists (Fubini, Rabinovici, Voss, to mention some) developed the idea in the 90s

SESAME

Memorandum of Understanding to establish a Condensed Matter, Environmental and High Energy Physics Collaborative Research in the Middle East

==========

I. Introduction

Under the auspices of Prof. Dr. Venice K. Gouda, Minister of State for Scientific Research of the Arab Republic of Egypt, and as a continuation of the correspondence between representatives of: the National Research Centre (Cairo), the Racah Institute of Physics, Hebrew University of Jerusalem and the Physics Departments of the Universities of Cagliari and Torino, a working visit of Prof. **Alberto Devoto** (*University of Cagliari*), *Prof.* **Sergio Fubini** (University of Torino), and Prof. **Eliezer Rabinovici** (Hebrew University, Jerusalem) was held in Cairo on January 7 and 8, 1995. The Egyptian participants in these meetings were:

1. Prof. Dr. **M.M. El Halwagi**, First Under-Secretary, Ministry of State for Scientific Research of the Arab Republic of Egypt
2. Prof. Dr. **Naiel Barakat**, Professor of Experimental Physics, Ain Shams University
3. Prof. Dr. **Sawsan Abdel Zaher**, Head of Physics Division, NRC
4. Prof. Dr. **Ahmed Fakhri**, Research Professor, Atomic Spectroscopy, NRC
5. Prof. Dr. **Mohamed Tag Eldin**, Head, Theoretical Physics Dept., NRC
6. Mr. **A.I. El-Ibiary**, Legal Advisor for NIOF.

The purpose of the meetings was to outline practical ways for collaboration in the fields of Condensed Matter, Environmental and High Energy Physics within the context of the above-mentioned parties.

It was agreed that:

i) It is of great importance to strengthen the scientific relationships between the above-mentioned parties in the various fields of Condensed Matter, Environmental and High Energy Physics for the benefit of common human knowledge.

ii) The parties recognize that important scientific achievements in Condensed Matter, Environmental and High Energy Physics can only be achieved through meaningful and sincere collaboration between experts, independently of their nationalities.

iii) Training of young scientists and researchers is of major importance and all the involved Institutions have the responsibility of contributing to their training in Condensed Matter, Environmental and High Energy Physics.

For these reasons the above-mentioned Institutions will take the initiative in developing a fruitful collaboration both in research and training.

IV. Finance

In order to develop a long-term collaboration, the parties agree to prepare joint research projects to be submitted in the near future to International funding agencies and World Organizations.

The parties agree not to delay the actual collaborative activities until the approval of the above-mentioned research projects and agree to start the collaborative work with the available funds.

To this end:

a) Travel expenses, accommodation and per diem of Egyptian and Israeli scientists invited to courses and scientific activities in the Italian Institutions will be taken care of by the Italian Institutions.

b) The Egyptian side will provide accommodation for Israeli and Italian Scientists invited to stay at Egyptian Institutions, within the scope of joint reserach collaboration (this does not include the International meeting mentioned under item III(c), for which special funding arrangements will be sought).

c) Travel expenses, accommodation and per diem of Egyptian and Italian scientists and students invited to courses and scientific activities at the Racah Institute will be taken care of by the Israeli Institute.

In summary, the above-mentioned Institutions consider this agreement as a sound base for collaboration in both research and training.

Signed in Cairo on January 8, 1995, in three originals in English.

Sergio Fubini

Prof. Dr. Mohamed Mokhtar El Halwagi
M.M. El Halwagi
First Under-Secretary of State
Ministry of Scientific Research
of the Arab Republic of Egypt
Cairo, Egypt

Prof. Sergio Fubini

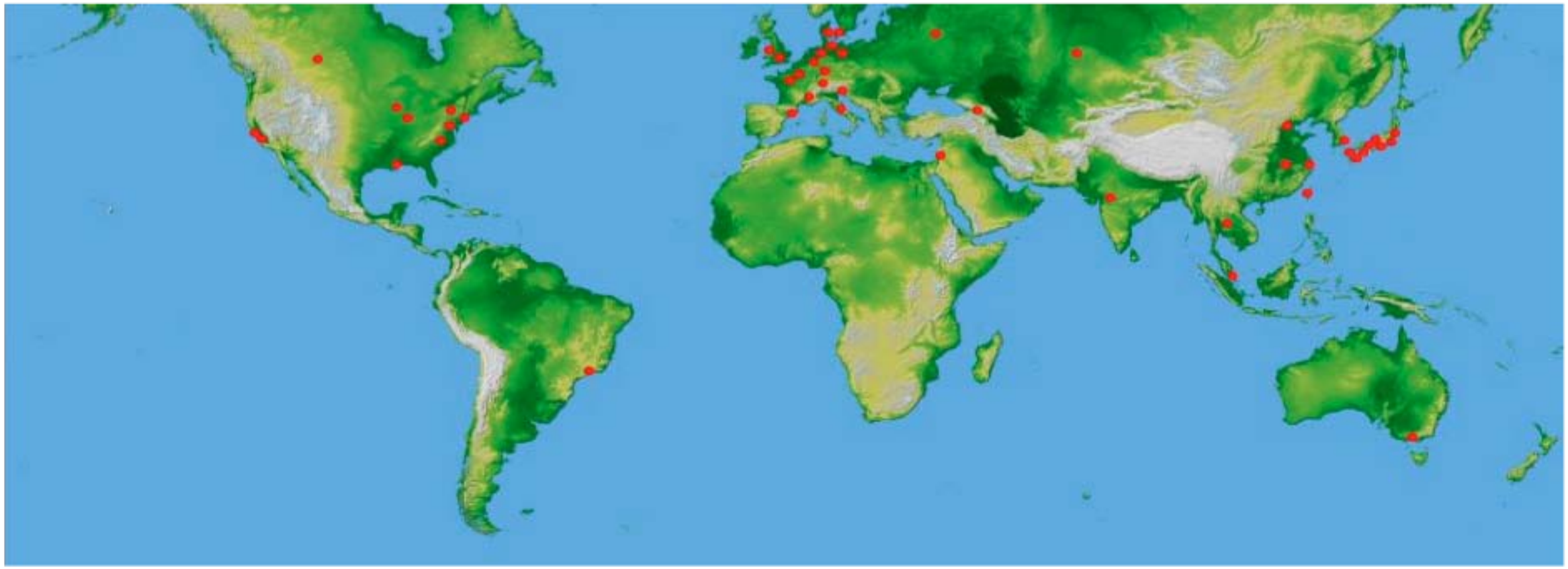
Representative of the
Scientific Committee
for the Middle East
Workshop
Torino, Italy

Eliezer Rabinovici

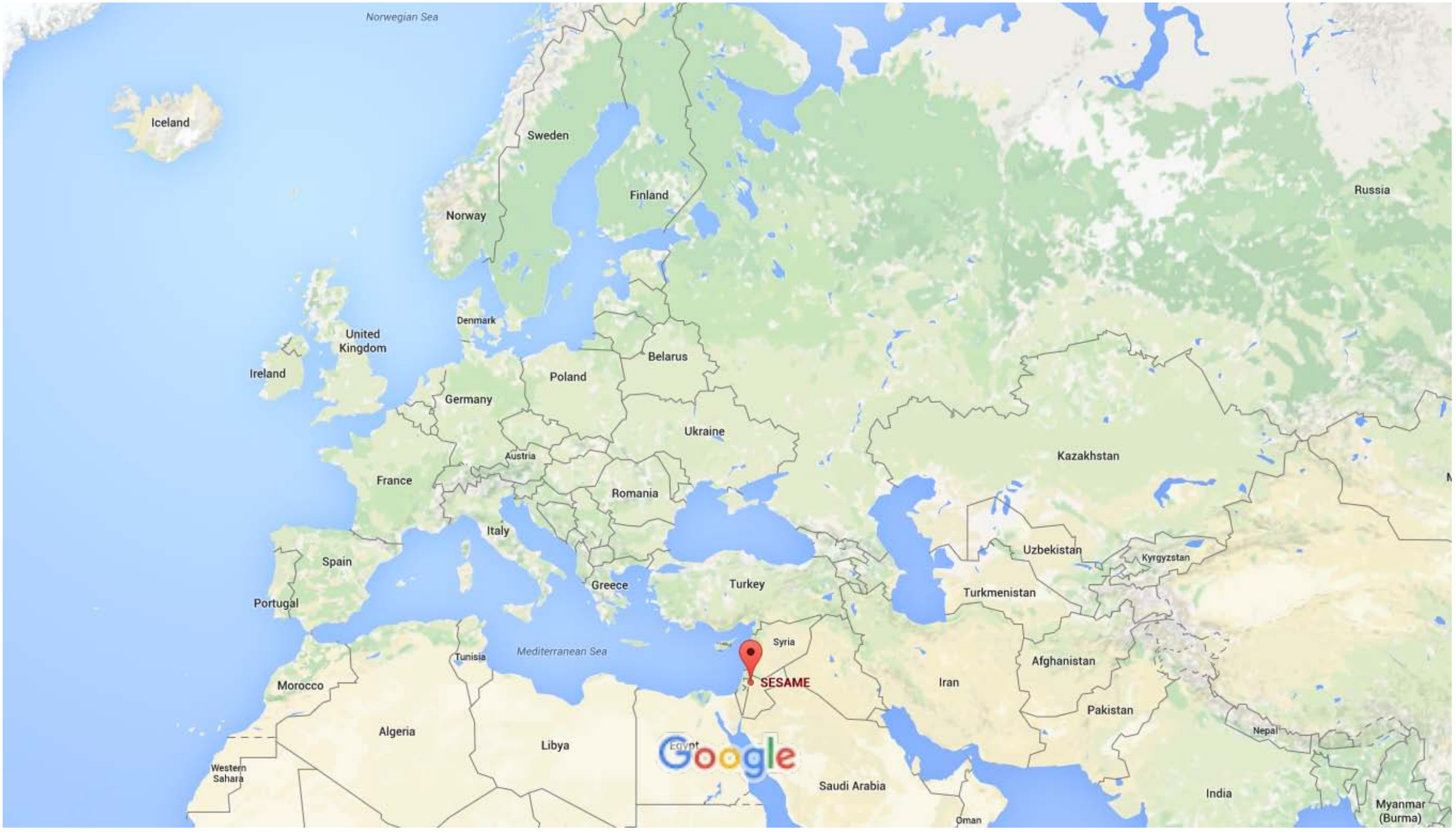
Prof. Eliezer Rabinovici

Chairman
Racah Institute of Physics
Jerusalem, Israel

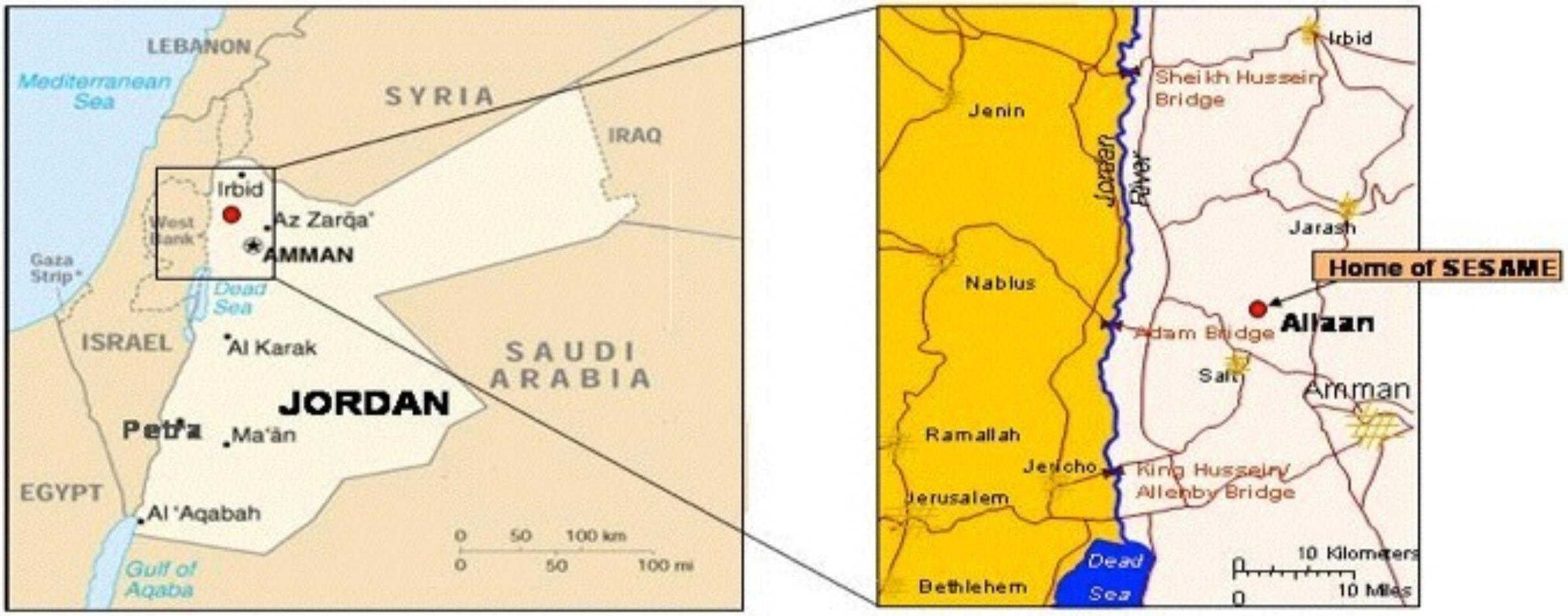
Distribution of SR sources



SESAME is in Jordan

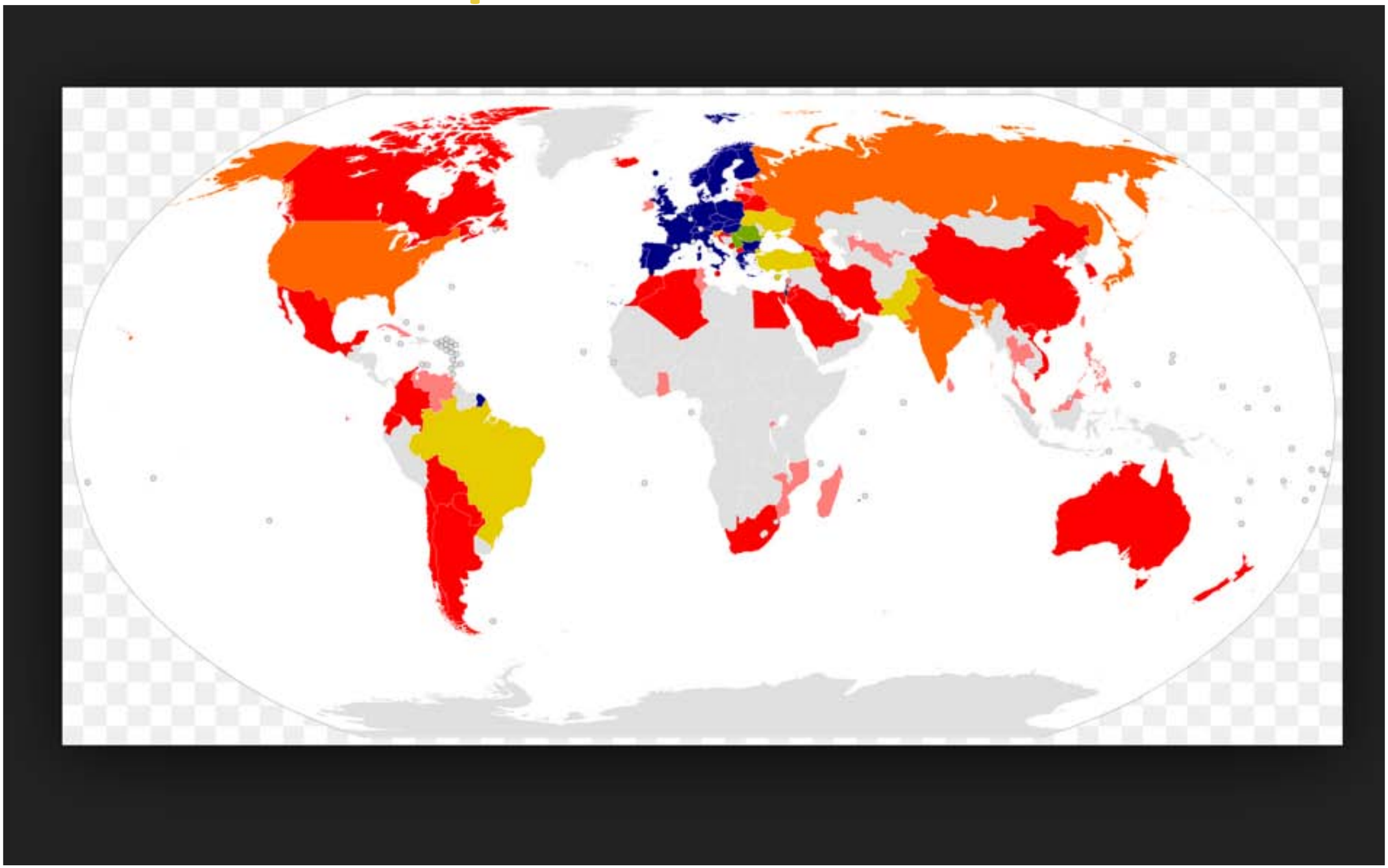


Location of SESAME



SESAME location in Allan, Jordan

CERN: members, associates, preaccession…



SESAME Members & Observers

Members: Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, Palestinian Authority, Turkey.

Observers:

Brazil, Canada, China (People's Republic of), the European Union, France, Germany, Greece, Italy, Japan, Kuwait, Portugal, Russian Federation, Spain, Sweden, Switzerland, the United Kingdom, the United States of America.

SESAME Members & Observers

Members: Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, Palestinian Authority, Turkey.

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Brazil, Canada, China (People's Republic of), the European Union, France, Germany, Greece, Italy, Japan, Kuwait, Portugal, Russian Federation, Spain, Sweden, Switzerland, the United Kingdom, the United States of America.

Objectives:

- **Foster excellence in science and technology in the Middle East.**
- **Reverse brain drain in the region.**
- **Enhance regional science and technology infrastructure.**
- **Contribute to improved understanding among peoples of diverse backgrounds through peaceful scientific cooperation.**

The Laboratory

SESAME is a third Generation Synchrotron Light Source

Original idea: rebuild an old German light-source (BESSY 1) in Jordan. The SESAME Members (most with very limited science budgets) joined with no obligation to provide capital funding. This idea was (correctly) abandoned (although refurbished parts of BESSY 1 will be used). Now building a new, competitive 3rd generation light-source which will attract the best scientists from across the region

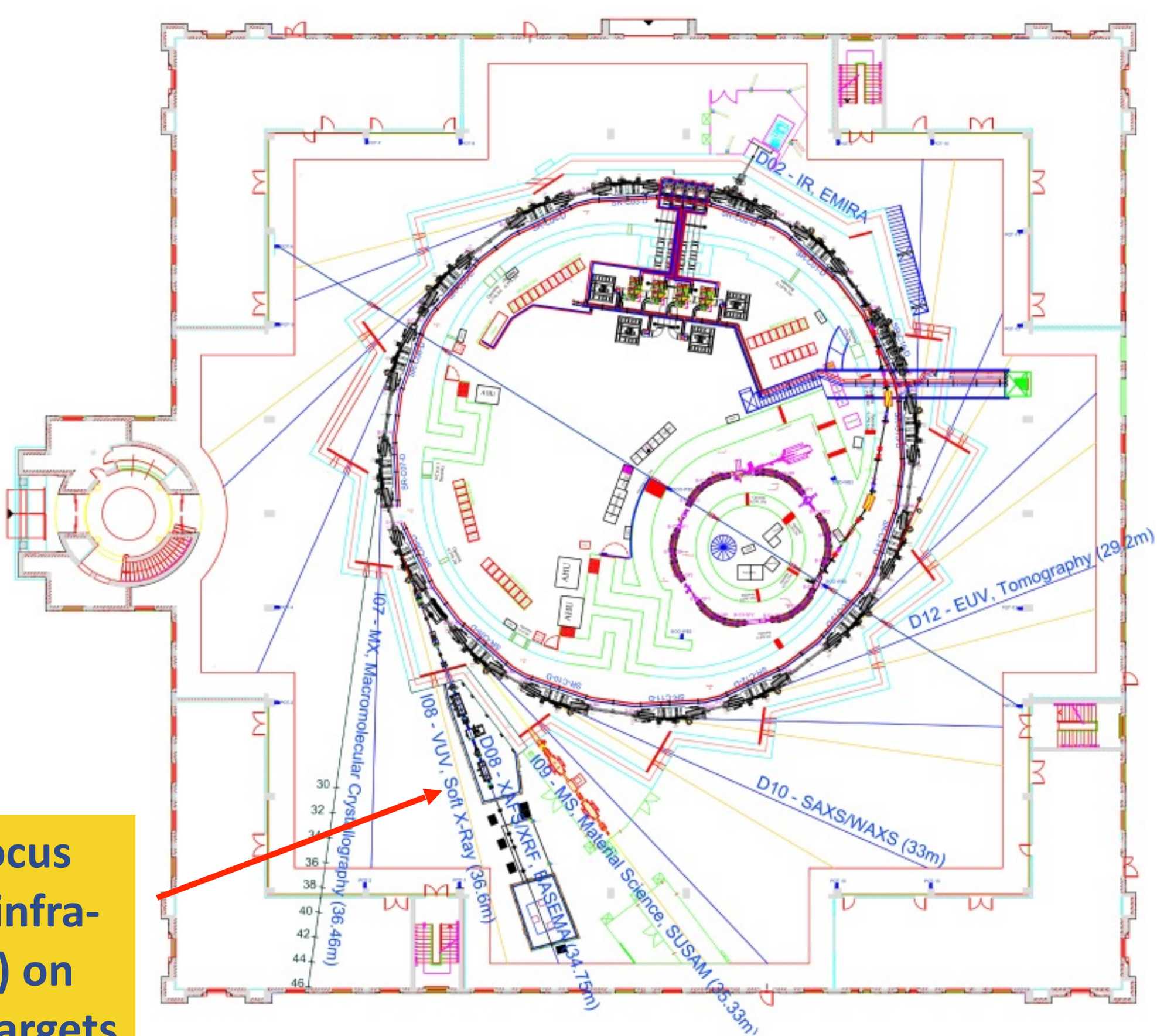
Energy; ***2.5 GeV***

Circumference; ***133m***

12 Insertion Devices

13 Bending Magnet beamlines

Space for future full energy injector in main ring tunnel

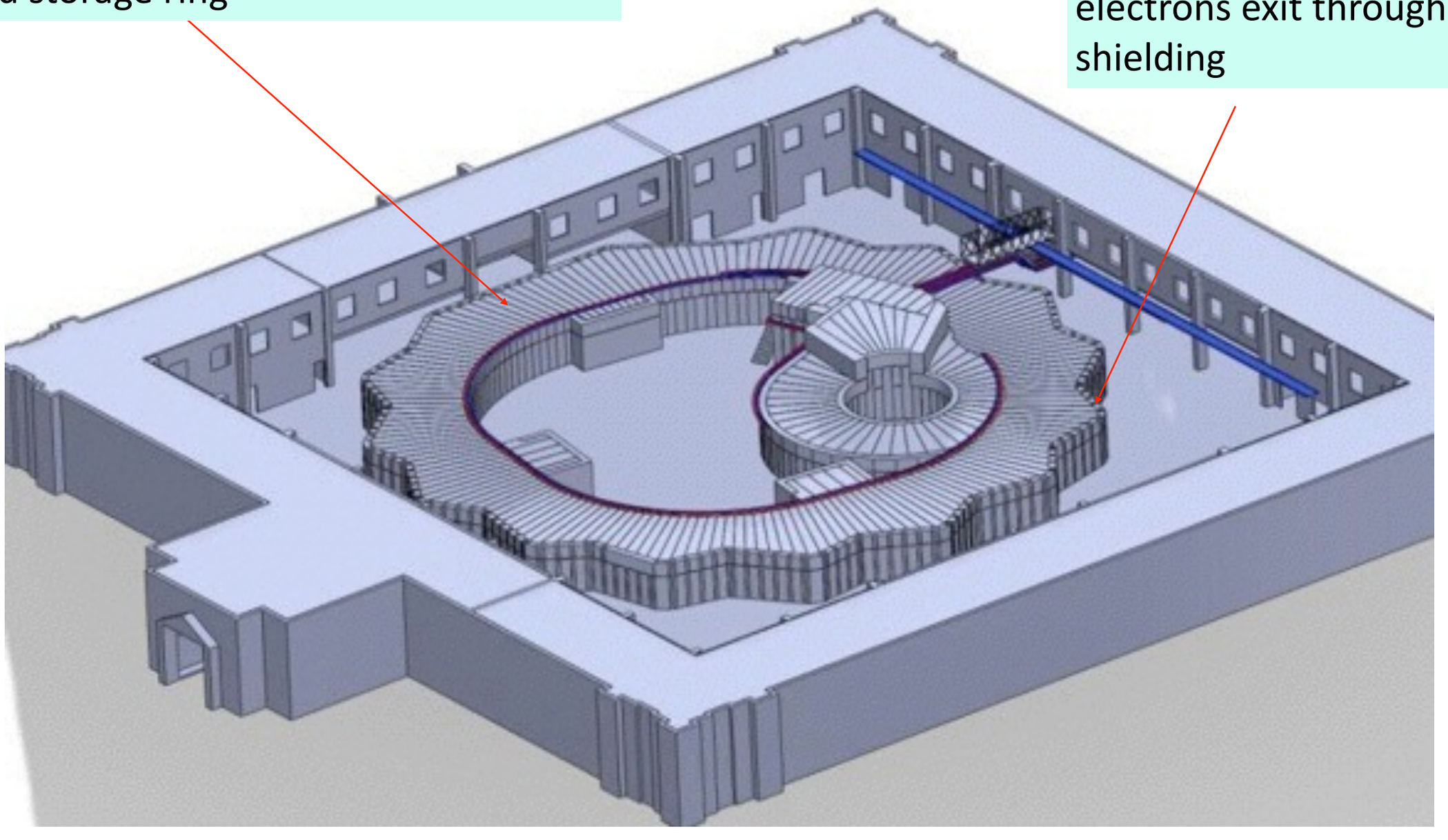


Beamlines focus intense light (infra-red to X-rays) on experimental targets

Inside the SESAME Experimental Hall Schematic

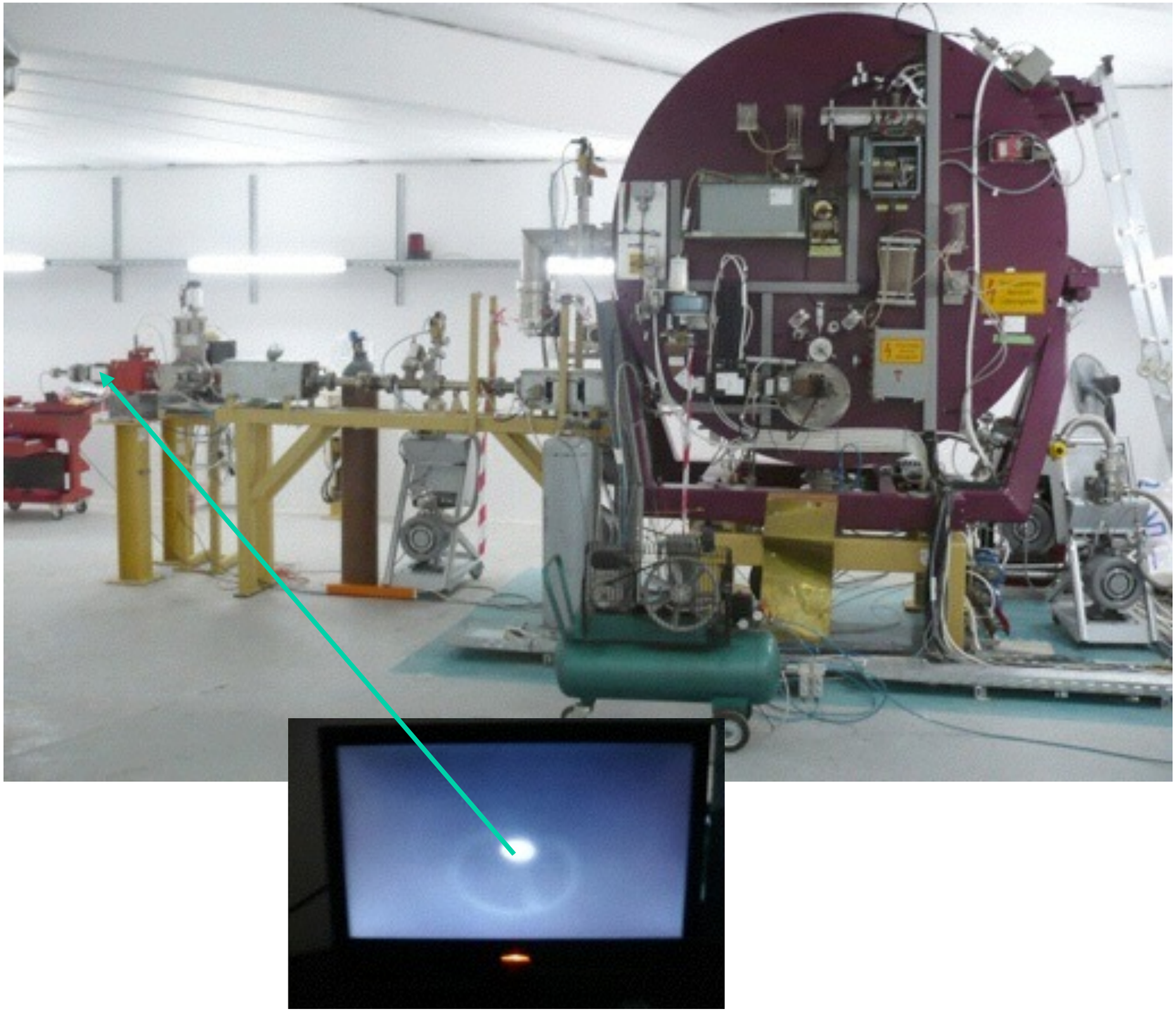
Shielding houses electron accelerator and storage ring

Intense beams of light (infra-red to X-rays) generated by circulating electrons exit through ports in the shielding

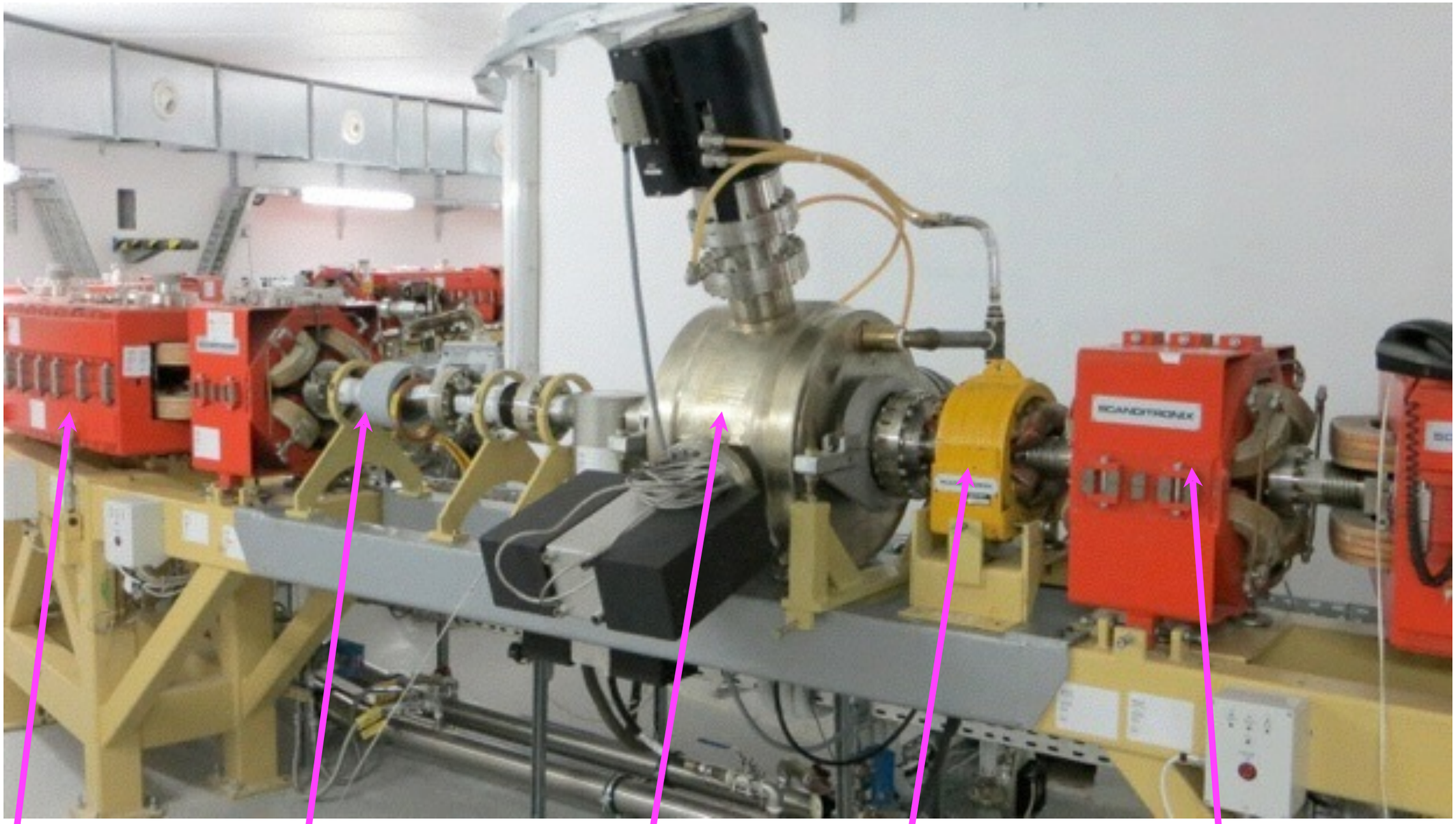


Shielding Completed, May 2011

Beam in the Transfer Line 1 – (2012)

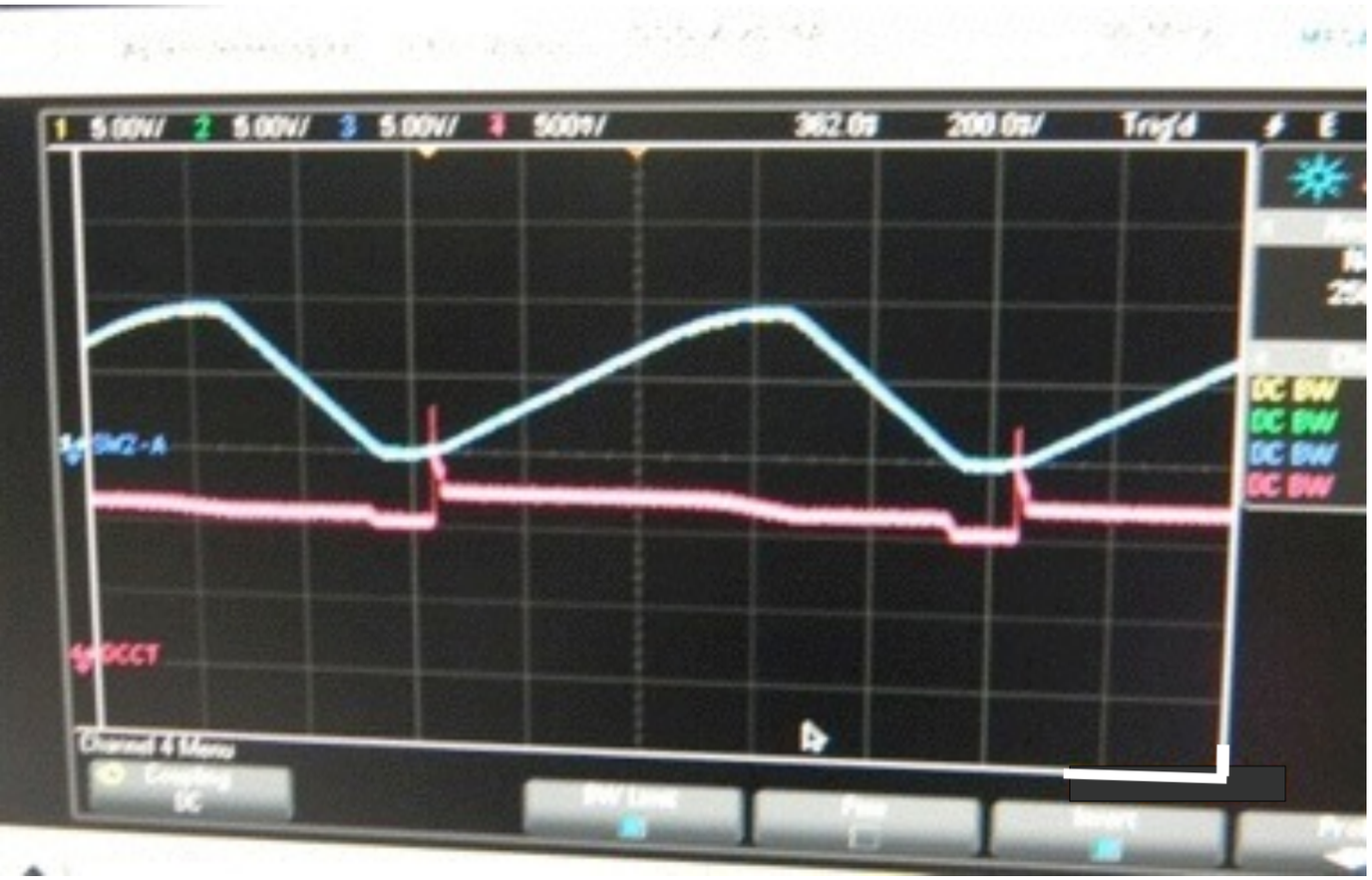


The Booster (based on BESSY1)



800 MeV Booster Beam Achieved on September 3, 2014

800 MeV Booster Beam Achieved on September 3, 2014



Control room monitor with 800 MeV, two injections appearing

800 MeV Booster Beam Achieved on September 3, 2014

Control room monitor with 800 MeV, two injections appearing

SESAME staff in the control room at the moment of achieving 800 MeV

The Roof accident
(Dec. 2013)

Construction of the New Roof (Oct. 2014)

Construction of the New Roof (Oct. 2014)

(Booster commissioned in THIS environment!)

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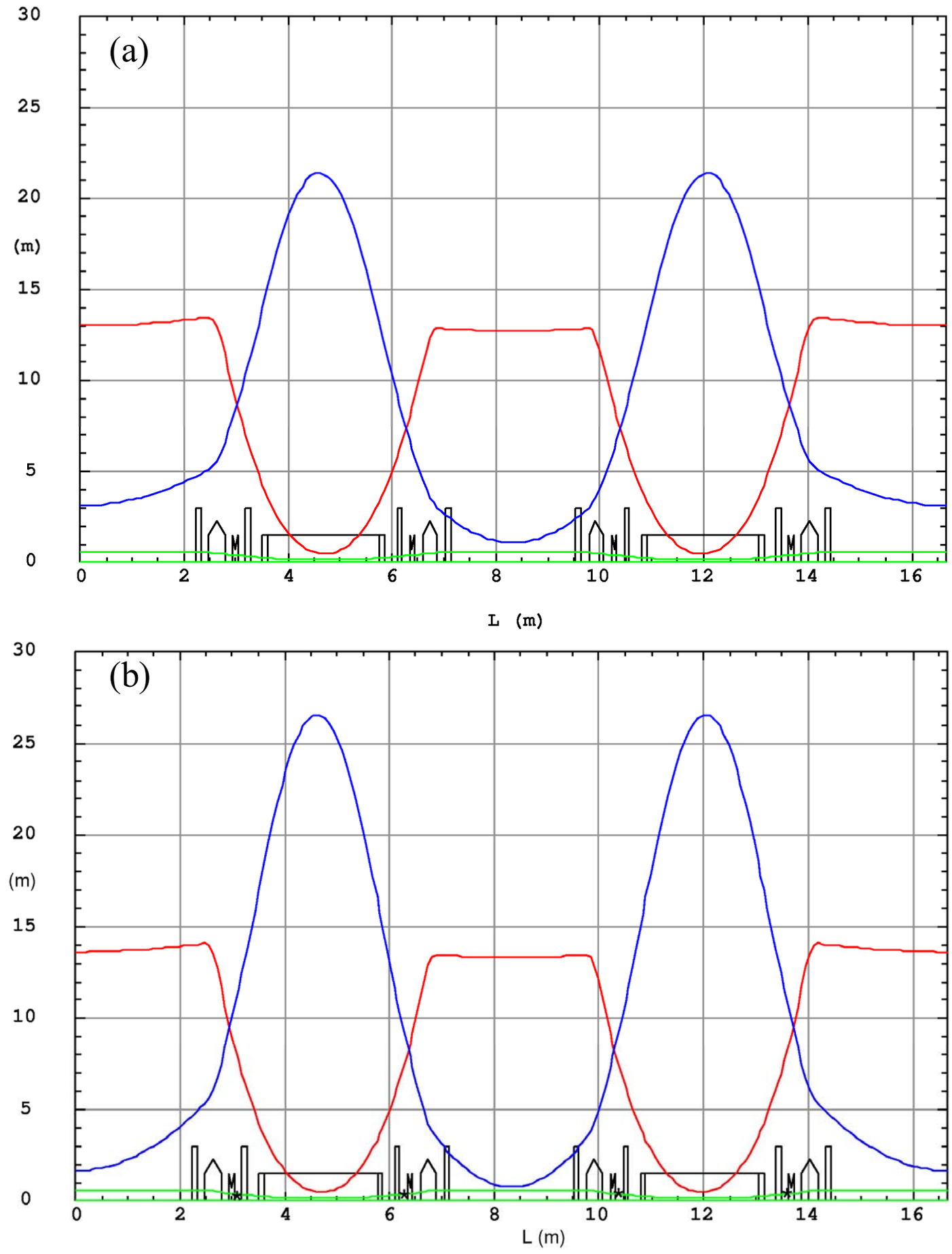
New Roof

DBA Optics

a) Optics 1 and b) Optics 2 for the SESAME Storage Ring. The horizontal beta function β_x (red), the vertical one β_z (blue) and the dispersion function D_x (green) are shown.



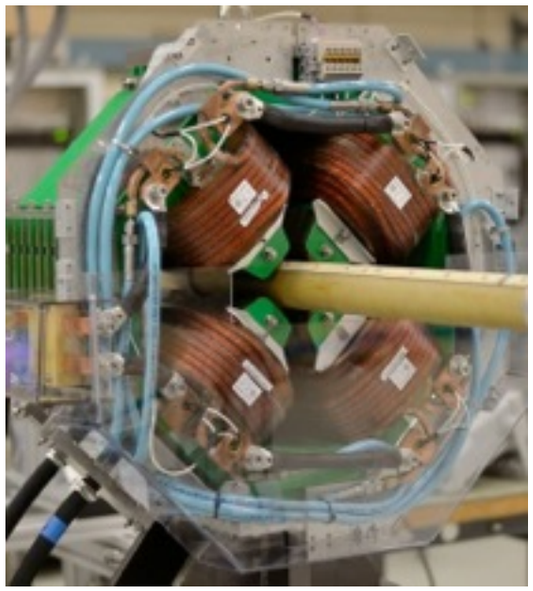
DBA Optics

Parameter	Unit	Optics 1	Optics 2
Energy	GeV	2.5	
Circumference	m	133.2	
Betatron tunes Q_x / Q_z		7.23 / 5.19	7.23 / 6.19
Number of super-periods		8	
Bending Dipole field	T	1.45545	
Field index **n**, gradient (T/m)		11, -2.794	
Natural Chromaticities H / V		-13.63 / -15.06	-15.15 / -20.56
Momentum compaction		0.008331	0.00828
Energy loss / turn	keV	590.2	
Damping times τ_E / τ_x / τ_z	msec	2.74/ 2.31/ 3.76	2.74/ 2.32/ 3.76
RMS energy spread σ_E	%	0.1074	0.1073
Natural emittances ε_x / ε_z	nm.rad	25.6400 / 0.2564	25.74 / 0.2574
Betatron coupling	%	1	

Storage Ring Magnets

Storage ring magnets constructed through the CESSAMag project in the frame of SESAME-CERN/EU collaboration.

- Dipole (constructed by TESLA, UK) prototype magnetically characterised at ALBA.



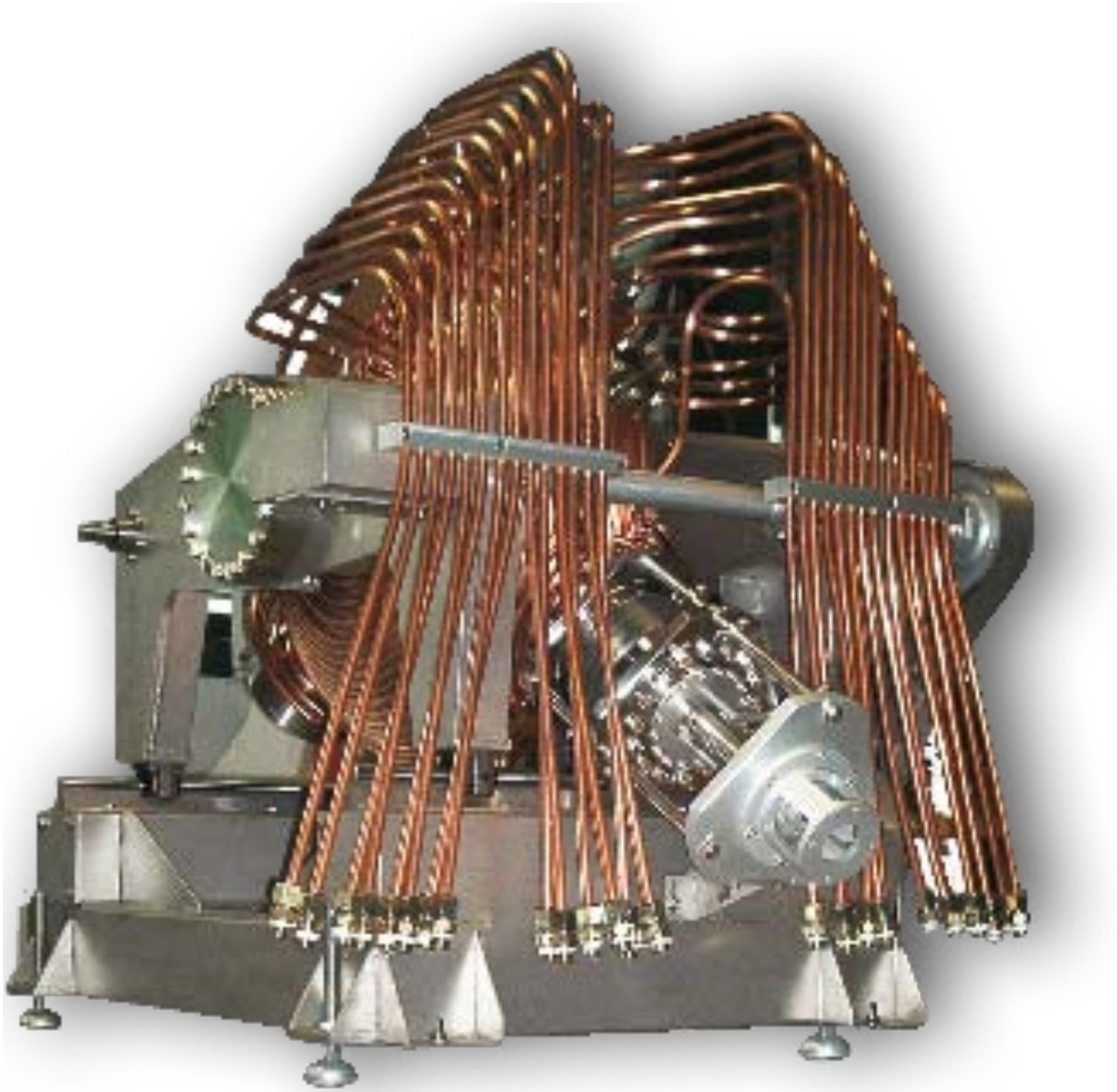
- Quadrupole assembled by Elytt-Spain, coils by STS-Turkey). First batch measured at CERN in March 2015.

- Sextupoles by CNE-Cyprus & HMC-3-Pakistan, coils by SEF-France). First batch was measured at CERN in March 2015.

Installation

Feb. 2016: First girder, magnets, vacuum chamber installed by CERN and SESAME teams

Storage Ring RF Cavities



Agreement signed with INFN and Elettra in May 2014 (Financial support from the Italian Ministry of Education, University and Research). Built by Elettra.

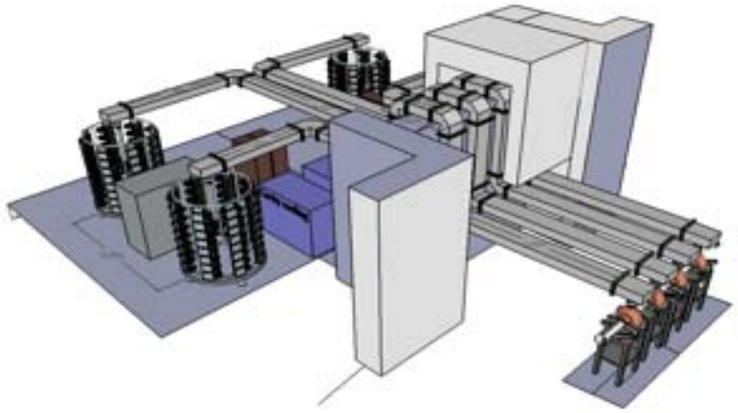
4 “Elettra type” RF Cavities are installed

First OPEN SESAME supported visit by Cristina Pasotti (Elettra) for the RF cavity tuning in July 2017

Storage Ring Status: RF System

The 500MHz RF system is composed of 4 RF plants.
Each plant includes:

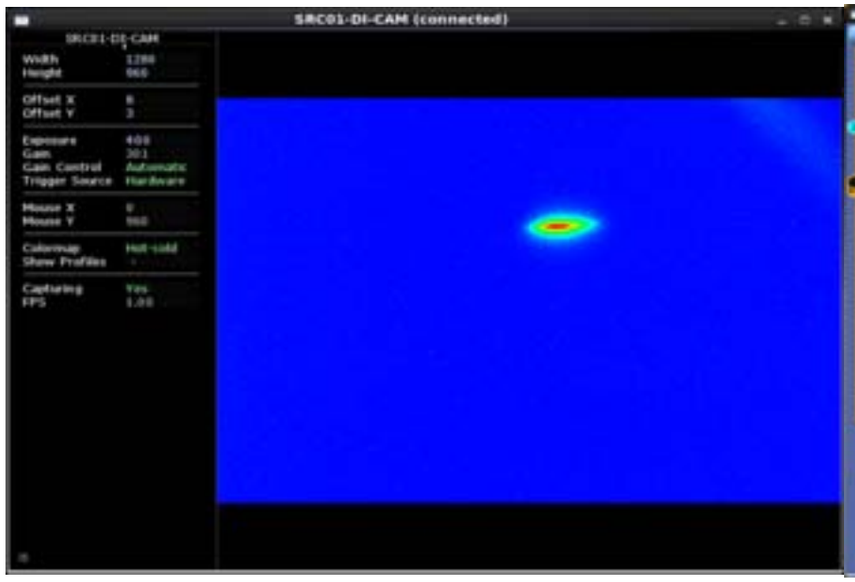
- **120kW Elettra cavity (detuned up to ±2MHz).**
- **80kW solid state amplifier (the 1st built by SOLEIL, the 3 others by Sigmaphi-SE).**
- **WR1800 waveguide (in kind contribution from DESY)**
- **Digital LLRF**



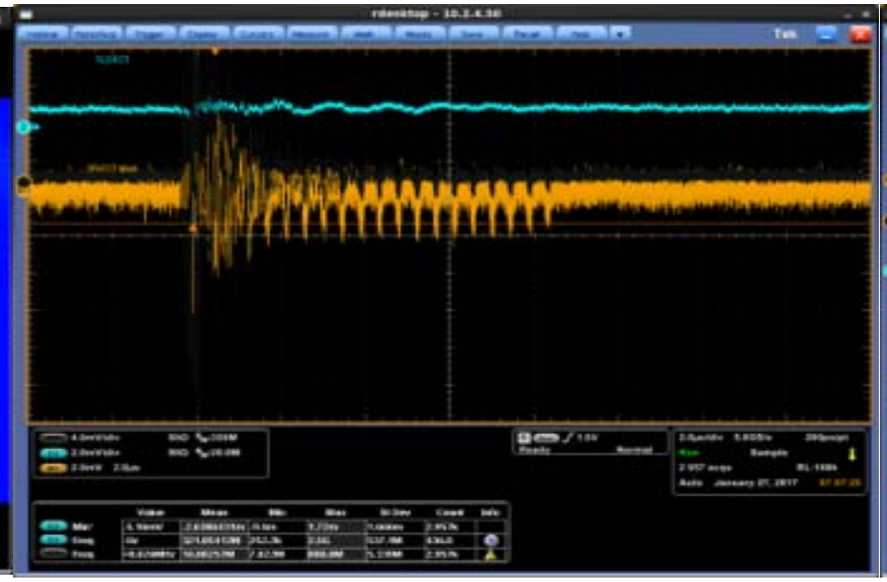
Courtesy of SOLEIL

Storage Ring Commissioning

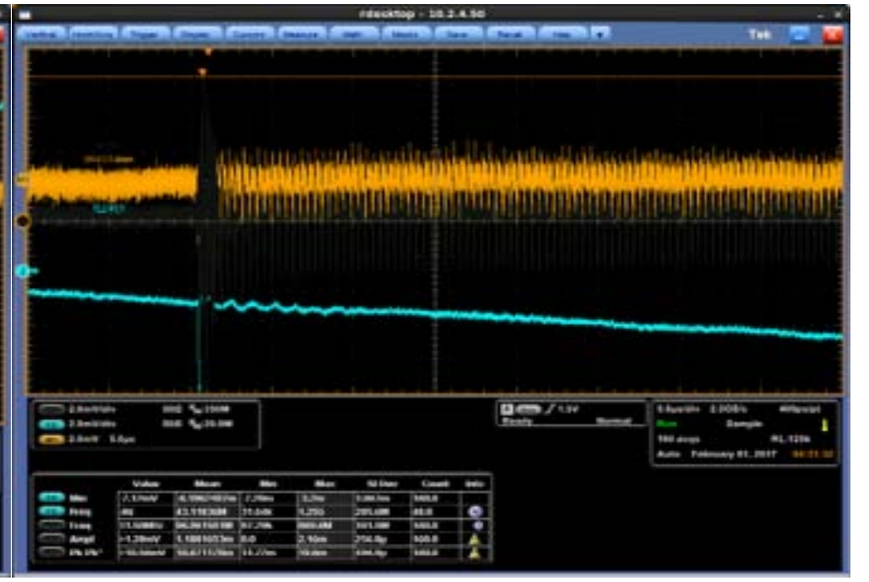
Full turn beam (Jan 11, 2017).



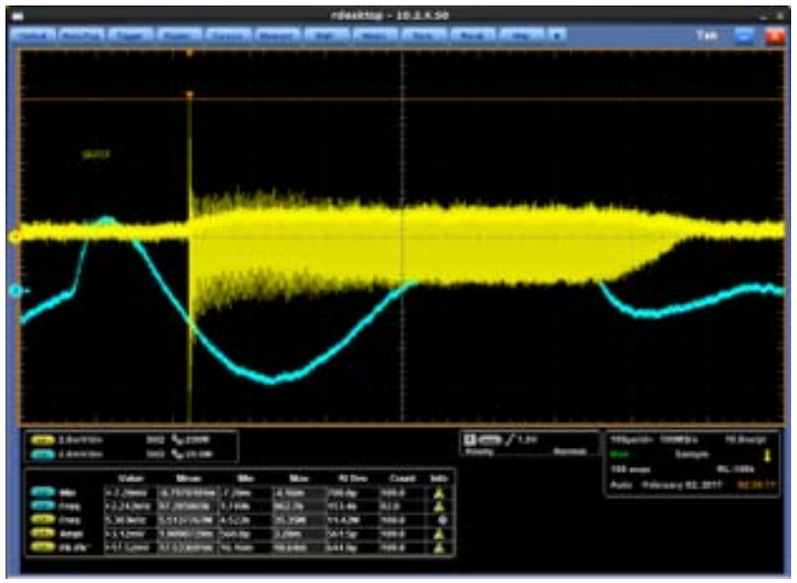
Multi-turns (Jan 26, 2017).



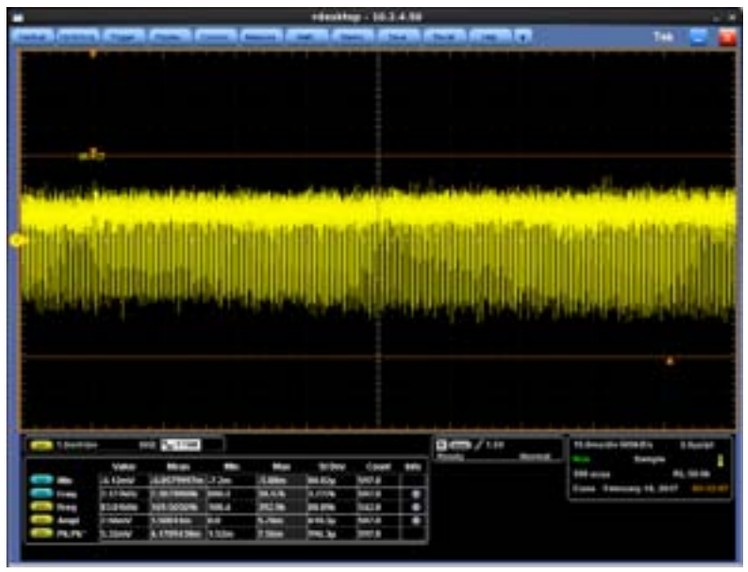
Hundreds of turns (Jan 31, 2017).



Thousands turns (Jan 31 -Feb. 6)

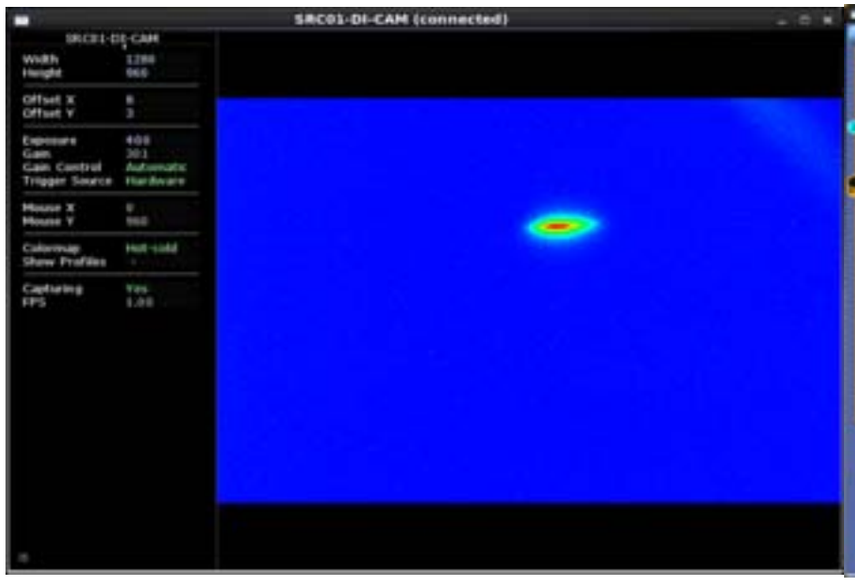


Stored beam with RF (Feb. 9, 2017).



Storage Ring Commissioning

Full turn beam (Jan 11, 2017).



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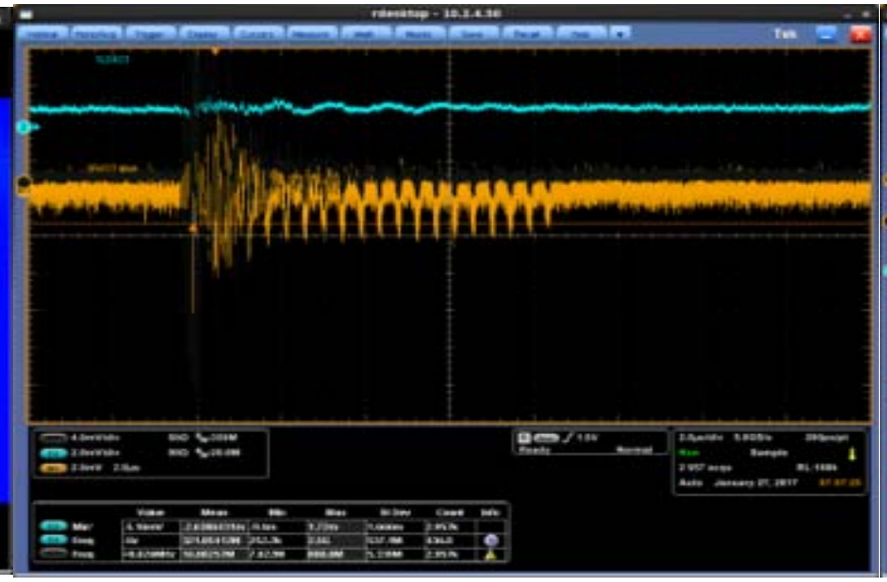

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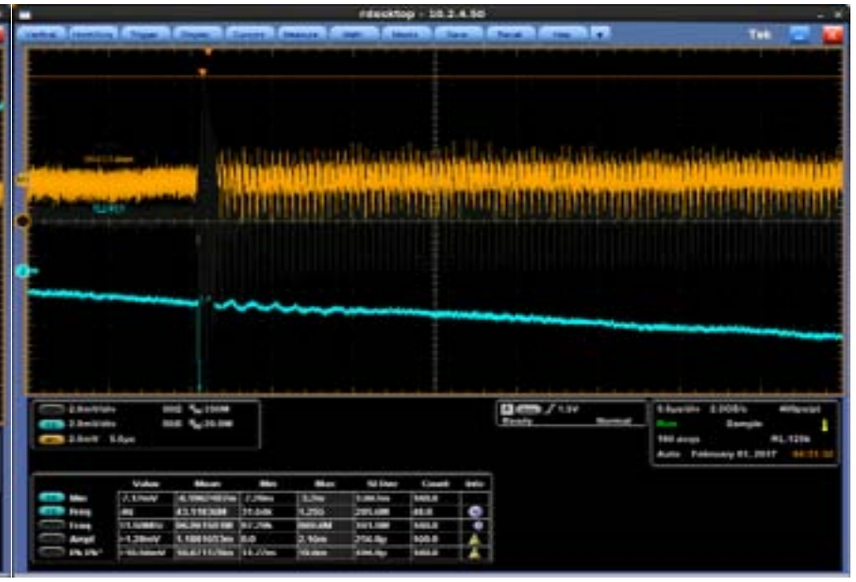

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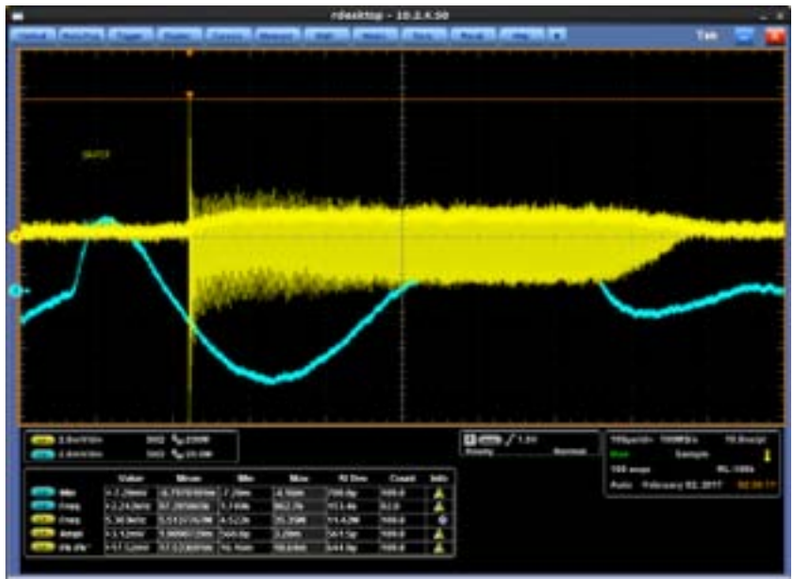

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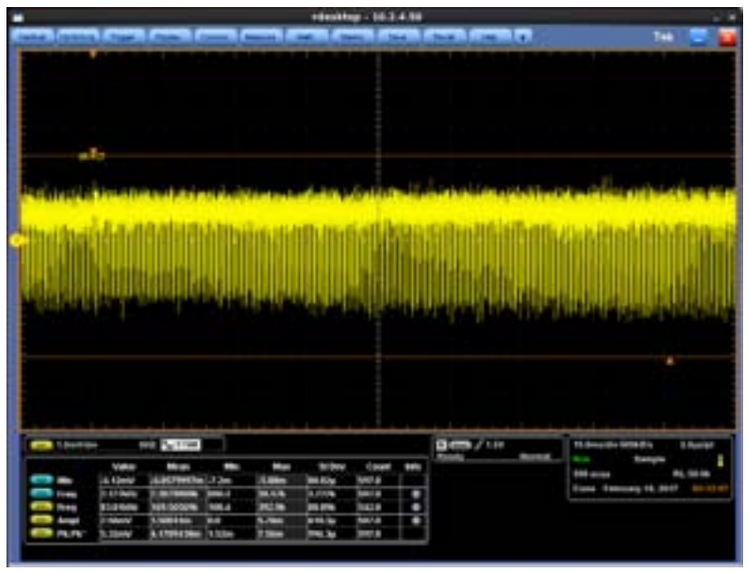


Presently:
E=2.5 GeV
i=60 mA
τ≈ 5 hrs

May 16, 2017: Opening

SESAME

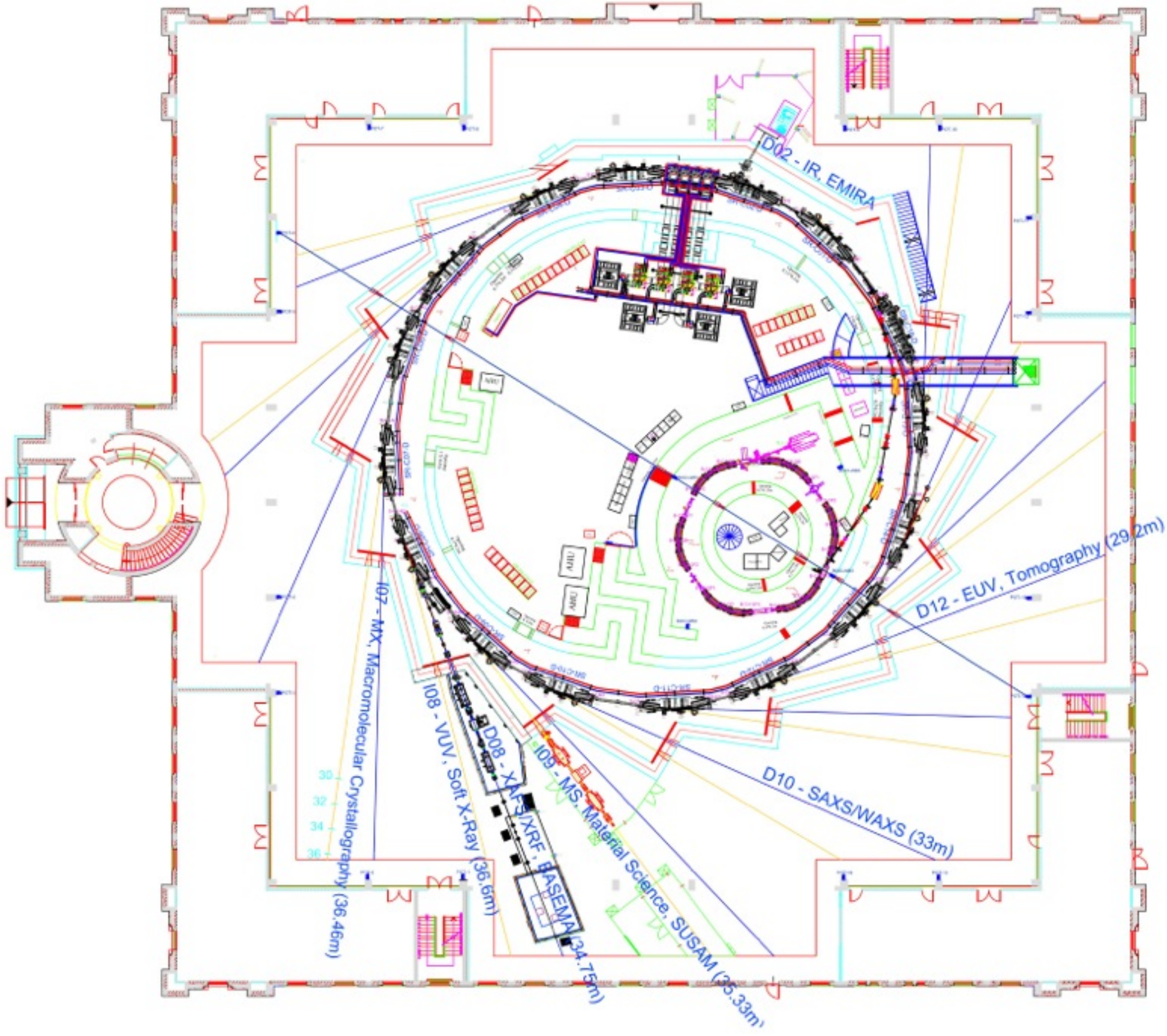
Energy; ***2.5 GeV***

Circumference; ***133m***

12 Insertion Devices

13 Bending Magnet beamlines

Space for future full energy injector in main ring tunnel



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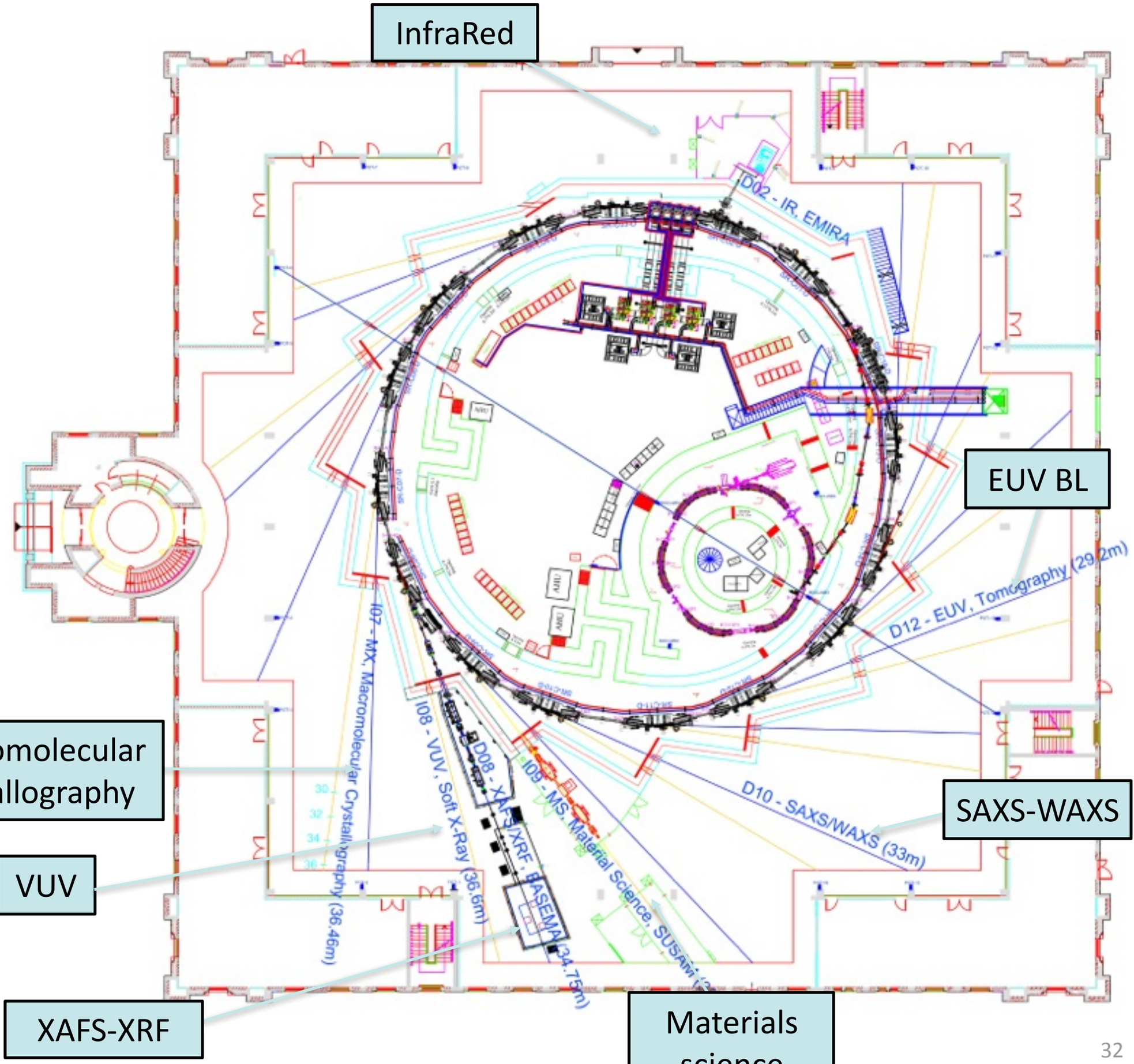


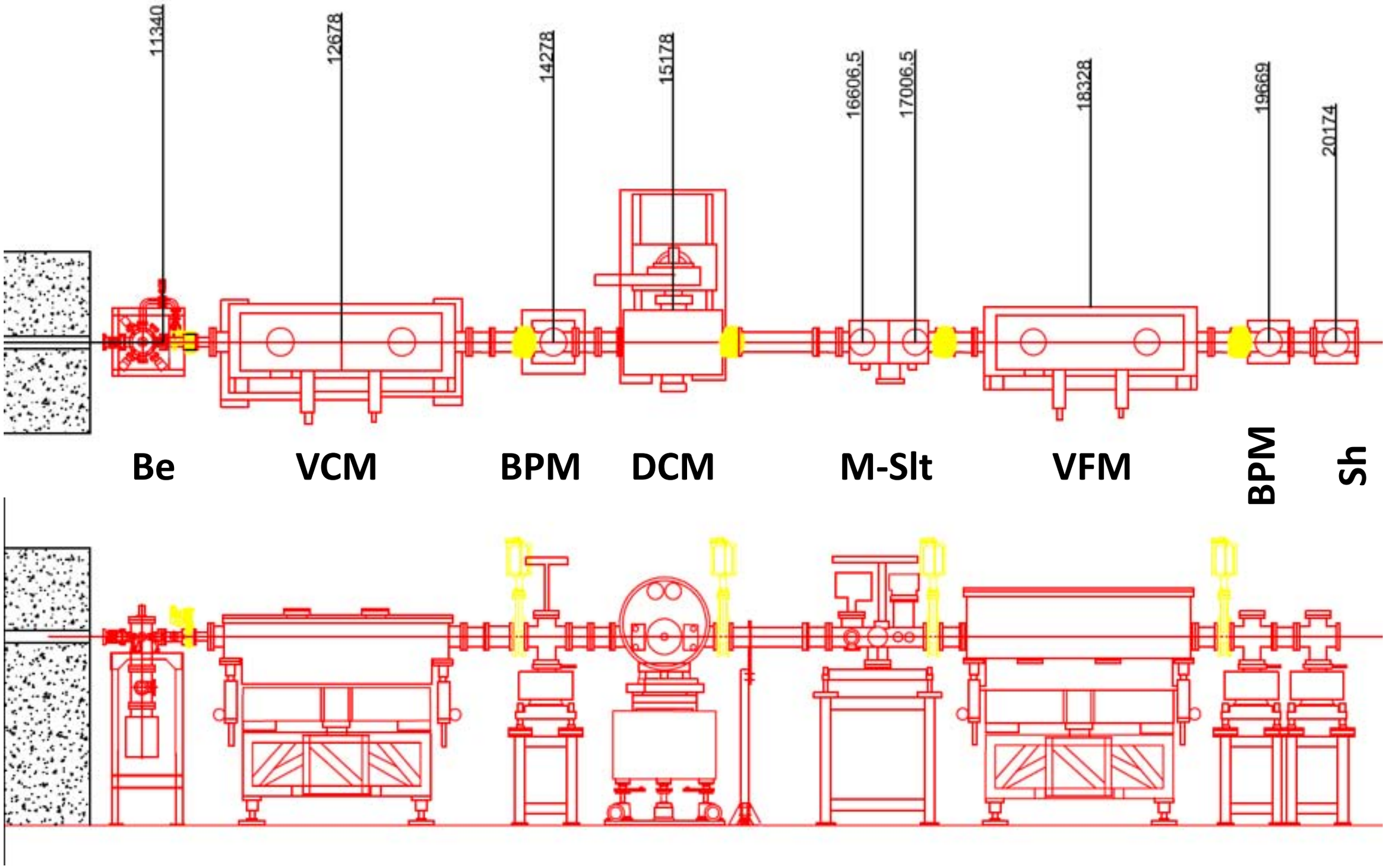
“Day-One” Beamlines

No	Beamline	Energy Range	Source Type	Comments
1	**XAFS/XRF**	4.5-30 keV	Bending Magnet	• Helmholtz-Zentrum Dresden-Rossendorf/ESRF • New focussing optics • New Hutch • Novel Detector
2	**IR (Infrared Spectromicroscopy)**	0.001-3 eV	Bending Magnet	• New beamline • Mod to storage vacuum chamber
3	**MS (Materials Science)**	5-25 keV	2.1 Tesla MPW (SLS)	• SLS XO4SA • New Hutch • Donated Dectris Detector
4	**Macromolecular Crystallography (MX)**	~4-~13 keV	IVU	• New Beamline • Partial support by the Jordanian Scientific Research Support Fund

XRF/XAFS Beamline

BL scientist in charge: Messaoud Harfouche

Beamline Layout



Safety Hutches Installed in April 2016

Optical Components Installed during Hutch Installation

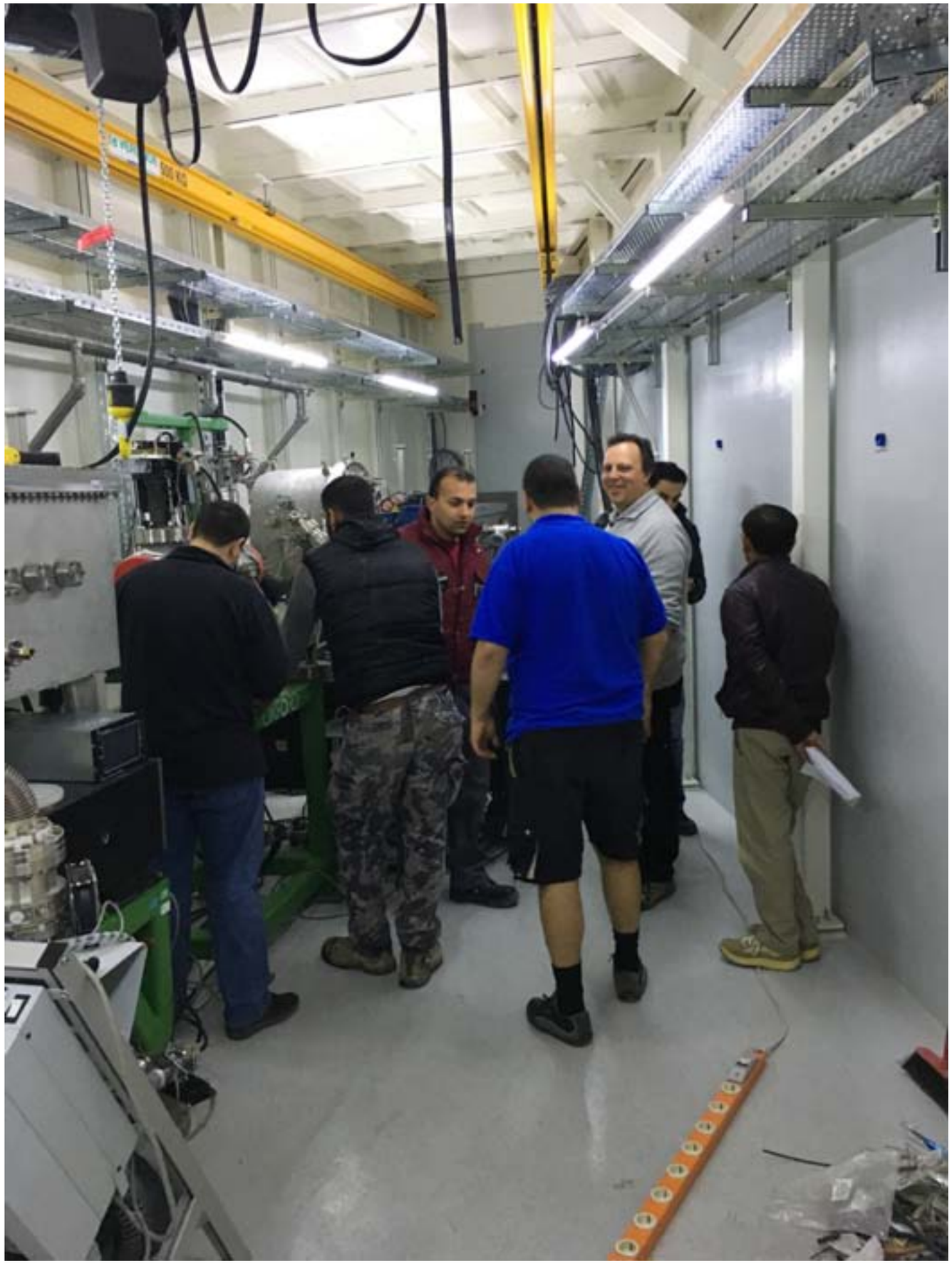
Optical Components Installed during Hutch Installation

Optical Components Inside the Hutch

Monochromator movement tested, with controller developed at SESAME

SESAME

Optical components aligned with support by SOLEIL team (IAEA supported)



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Collimating mirror

XAFS/XRF Beamline

XAFS Fluorescence detector

Agreement with INFN to use part of the Italian contribution* for an innovative Si-drift detector.

It is expected that the new detector will have a sensitivity at least 50 times higher than existing technology as well as an unprecedented dynamic range

*1M€ in 2013, 850k€ in 2014, 500 k€ in 2015
1.25 M€ committed for the RF cavities.

XAFS/XRF Beamline

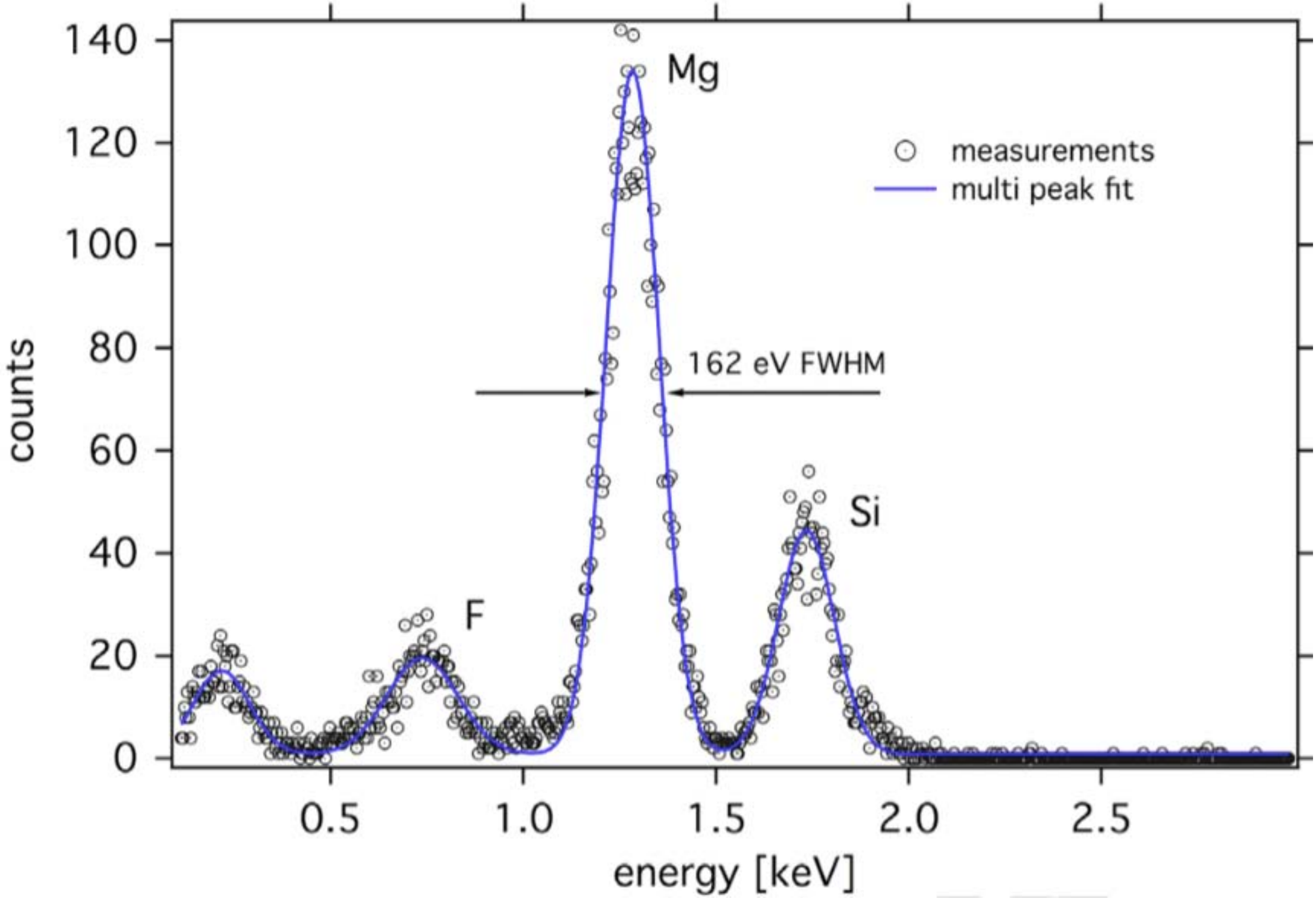
XAFS Fluorescence detector

The 8 channel SDDA anode (top) and entrance window (bottom) sides.
The SESAME detector will include 8 of these modules (64 cells).
Each cell (9 $mm^{2)}$ can handle 50 kc/s → 3.2 Mc/s total, with
an active area of 576 mm^2

XAFS/XRF Beamline

XAFS Fluorescence detector

Room temperature tests



IR Beamline

BL scientist in charge: Gihan Kamel

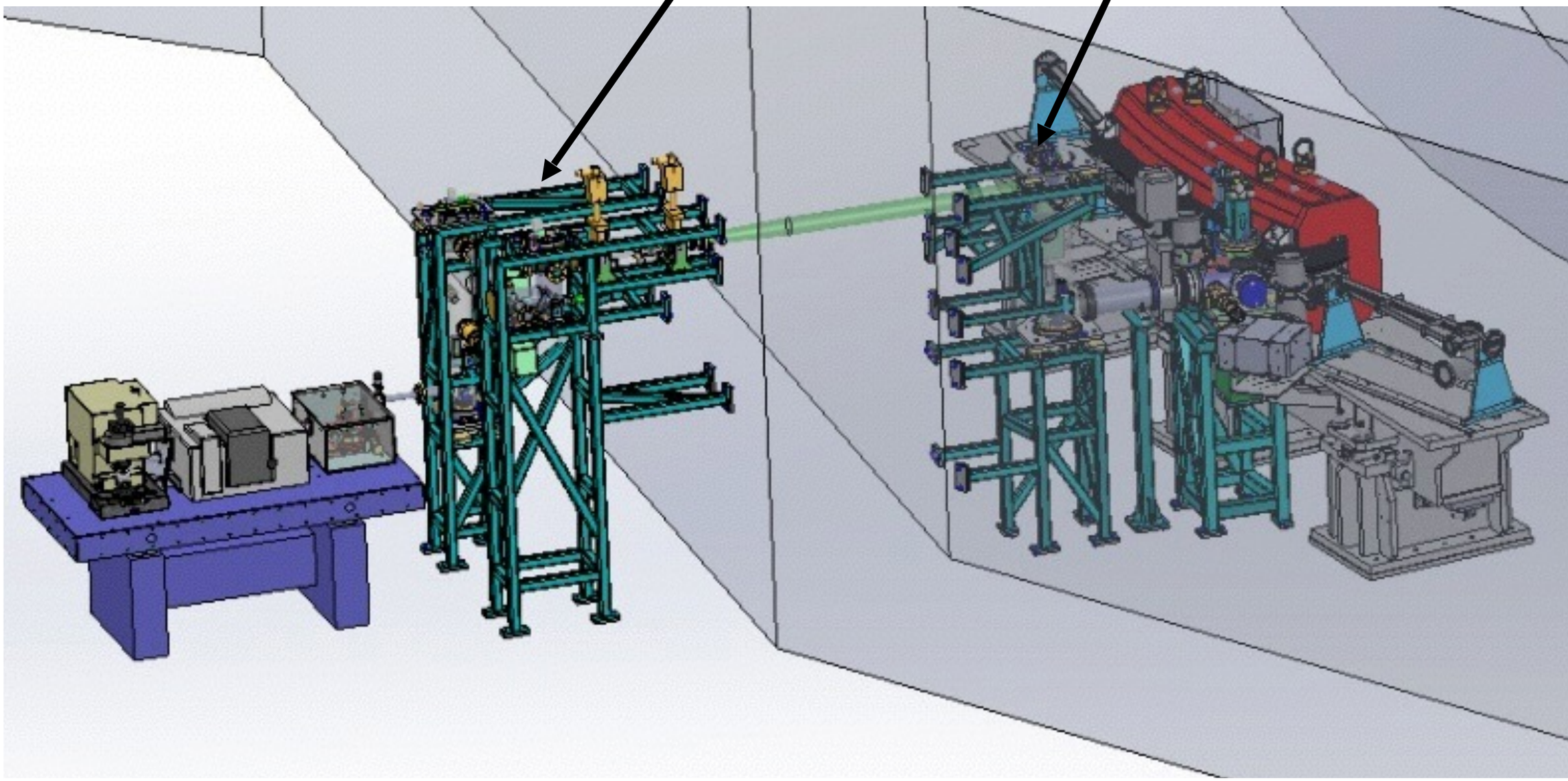
SESAME

December 2016

Converging point:

Manufacturing of the Stage II Cells (in progress)

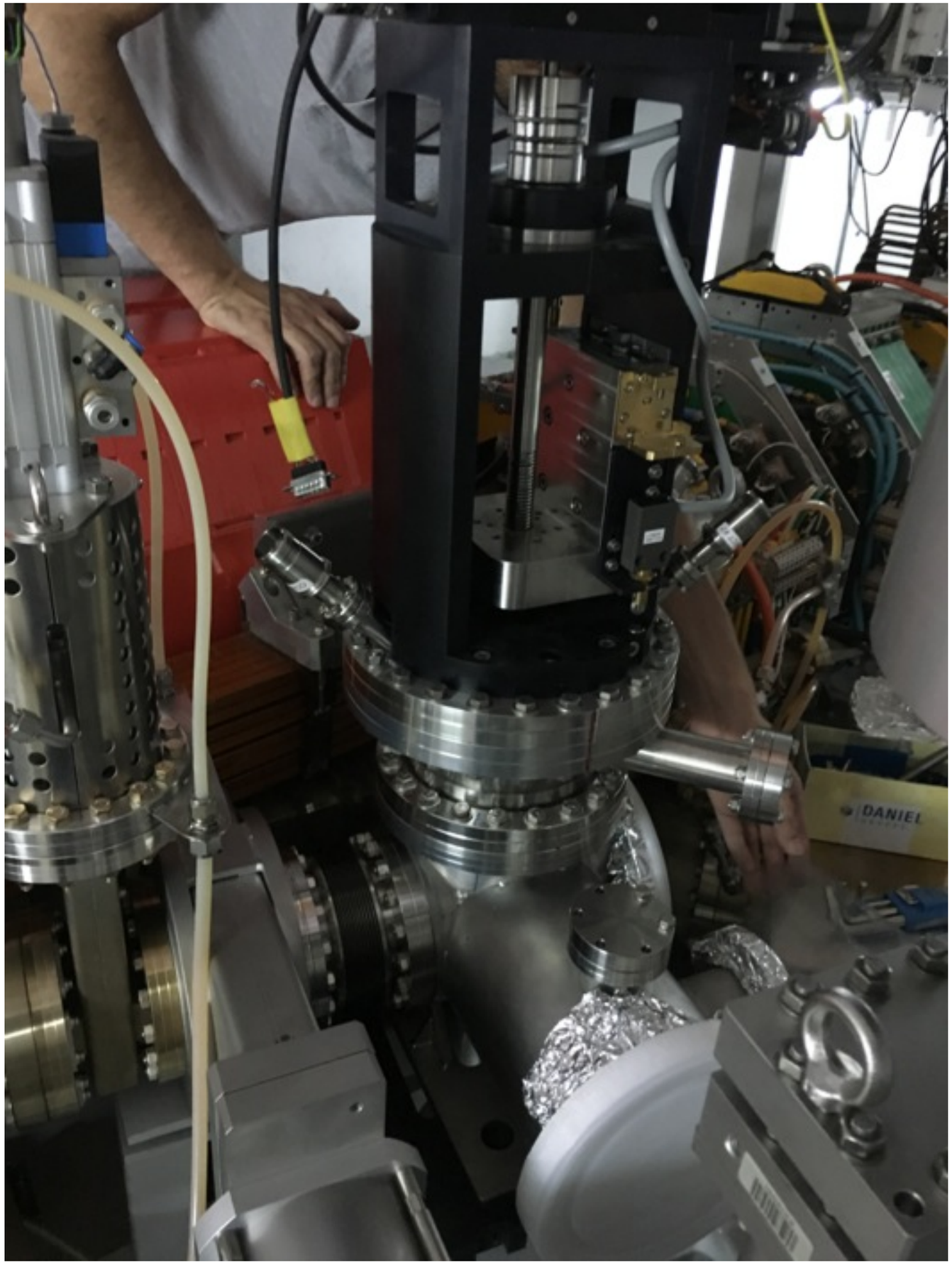
Assembly and testing of Stage I Cells (done!)



SESAME

JUNE 2017:
Beginning beamline Installation

August 2017:
First mirror chamber installed



September 2017:

Optical elements up to the shielding wall installed.

The existing (and operational!) IR microscope

First published papers from the 2013 call for proposals

Materials and Design 89 (2016) 568–572

Contents lists available at ScienceDirect

Materials and Design

journal homepage: www.elsevier.com/locate/jmad

Optical and μ-FTIR mapping: A new approach for structural evaluation of V_2O_5-lithium fluoroborate glasses

A.M. Abdelghany [a,*], H.A. ElBatal [b]

[a] Spectroscopy Department, Physics Division, National Research Center, Dokki, 12311 Cairo, Egypt
[b] Glass Department, National Research Center, Dokki, 12311 Cairo, Egypt

Analyst

PAPER

View Article Online
View Journal

Cite this: DOI: 10.1039/c5ar02378e

Study of the biochemical effects induced by X-ray irradiations in combination with gadolinium nanoparticles in F98 glioma cells: first FTIR studies at the Emira laboratory of the SESAME synchrotron

Ibraheem Yousef,[a,b] Olivier Seksek,[c] Silvia Gil,[c] Yolanda Prezado,[c] Josep Sulé-Suso[d] and Immaculada Martinez-Rovira*[c]

Materials Science Beamline

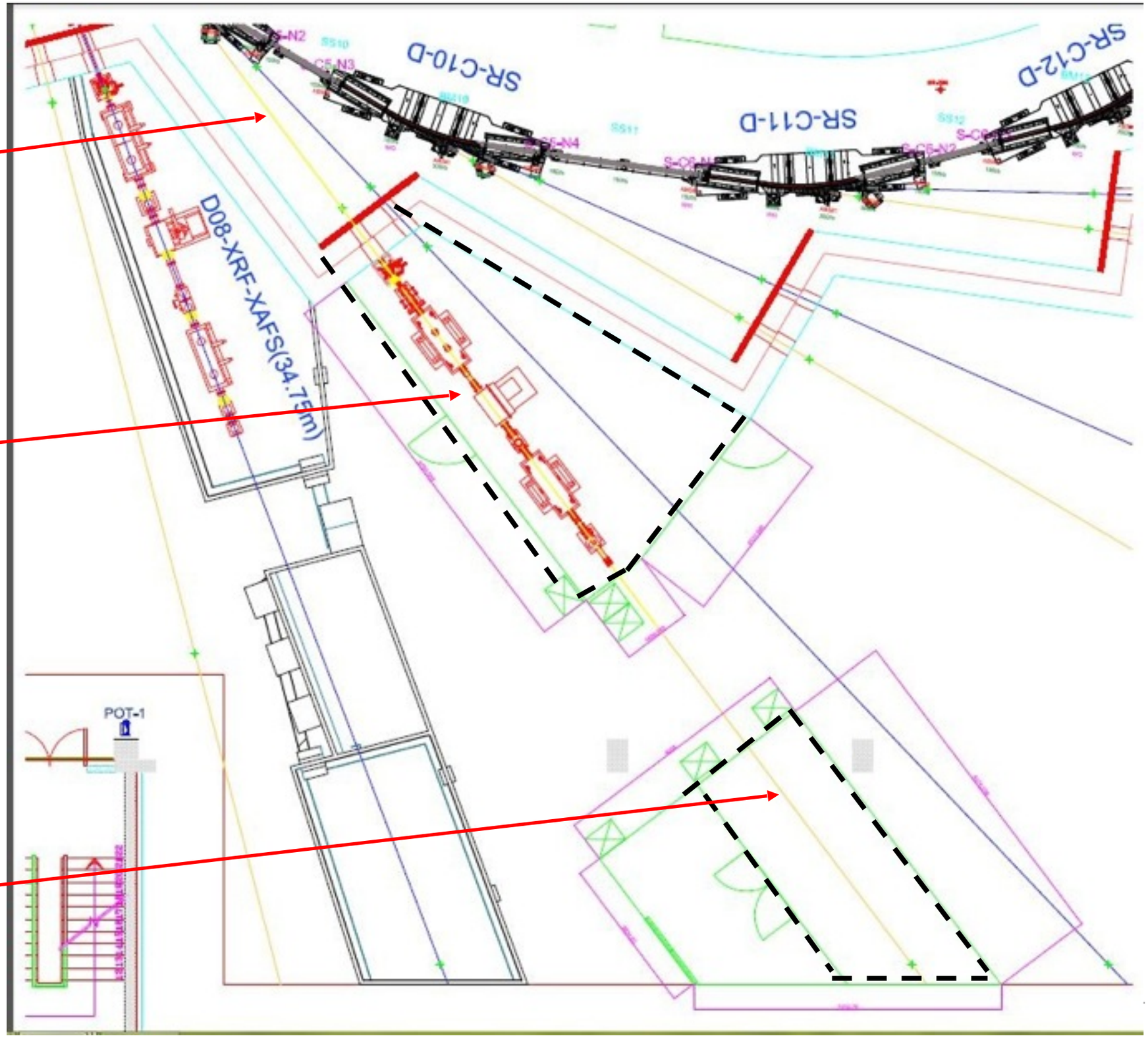
BL scientist in charge: Mahmoud Abdellatief

Materials Science Beamline Layout

Front end

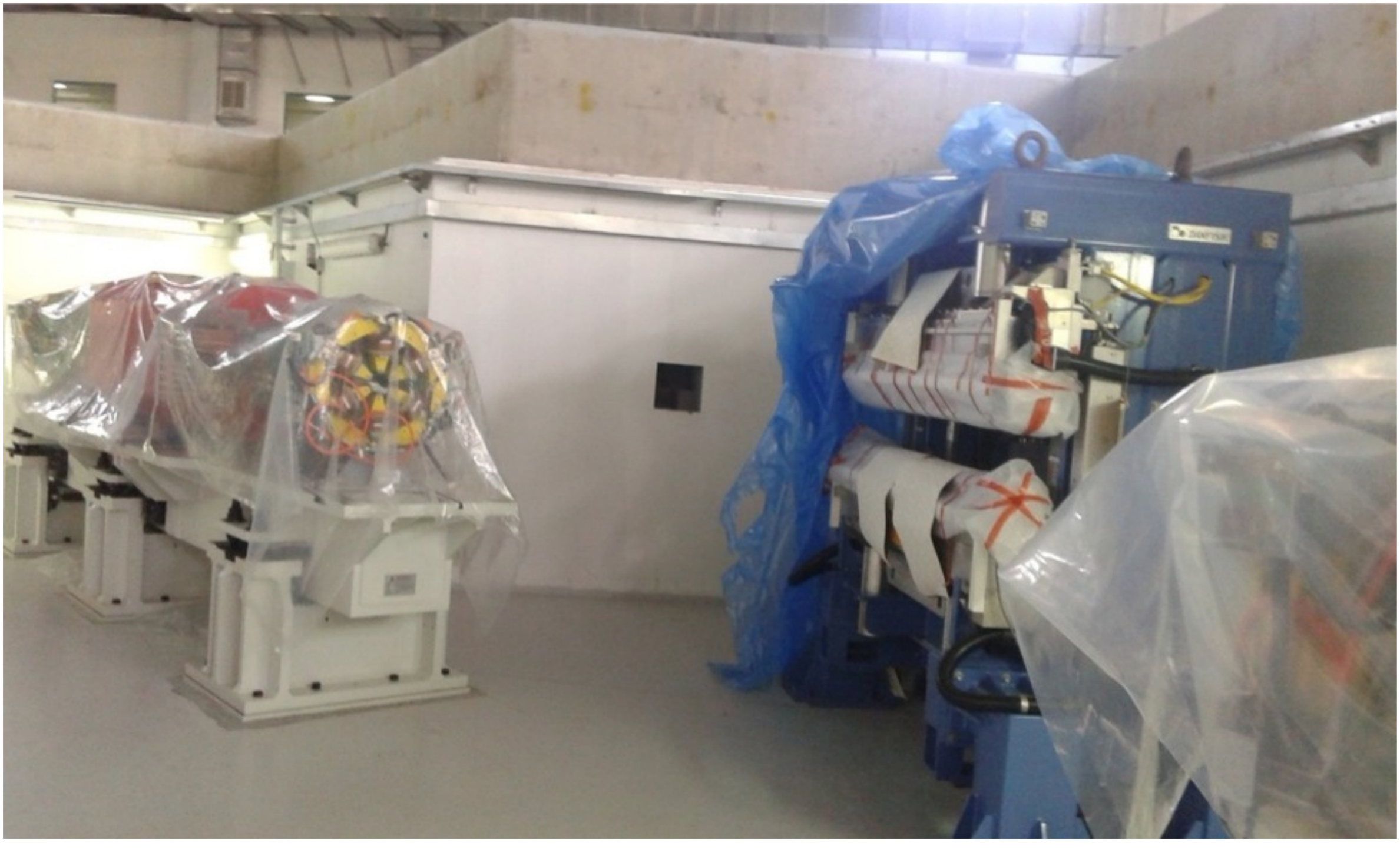
Optics

Experimental



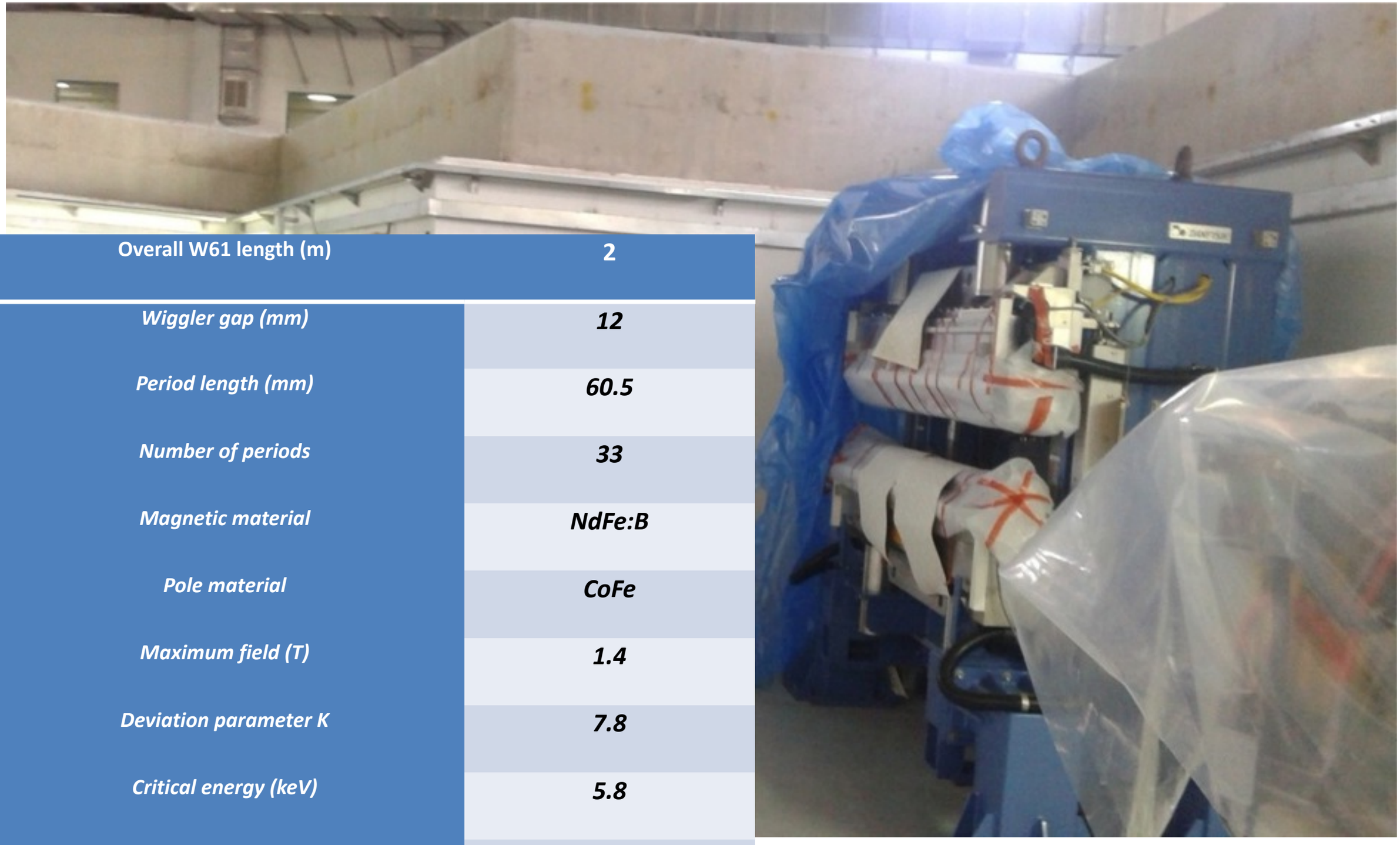
Materials Science Beamline

MS wiggler inside the storage ring



Materials Science Beamline

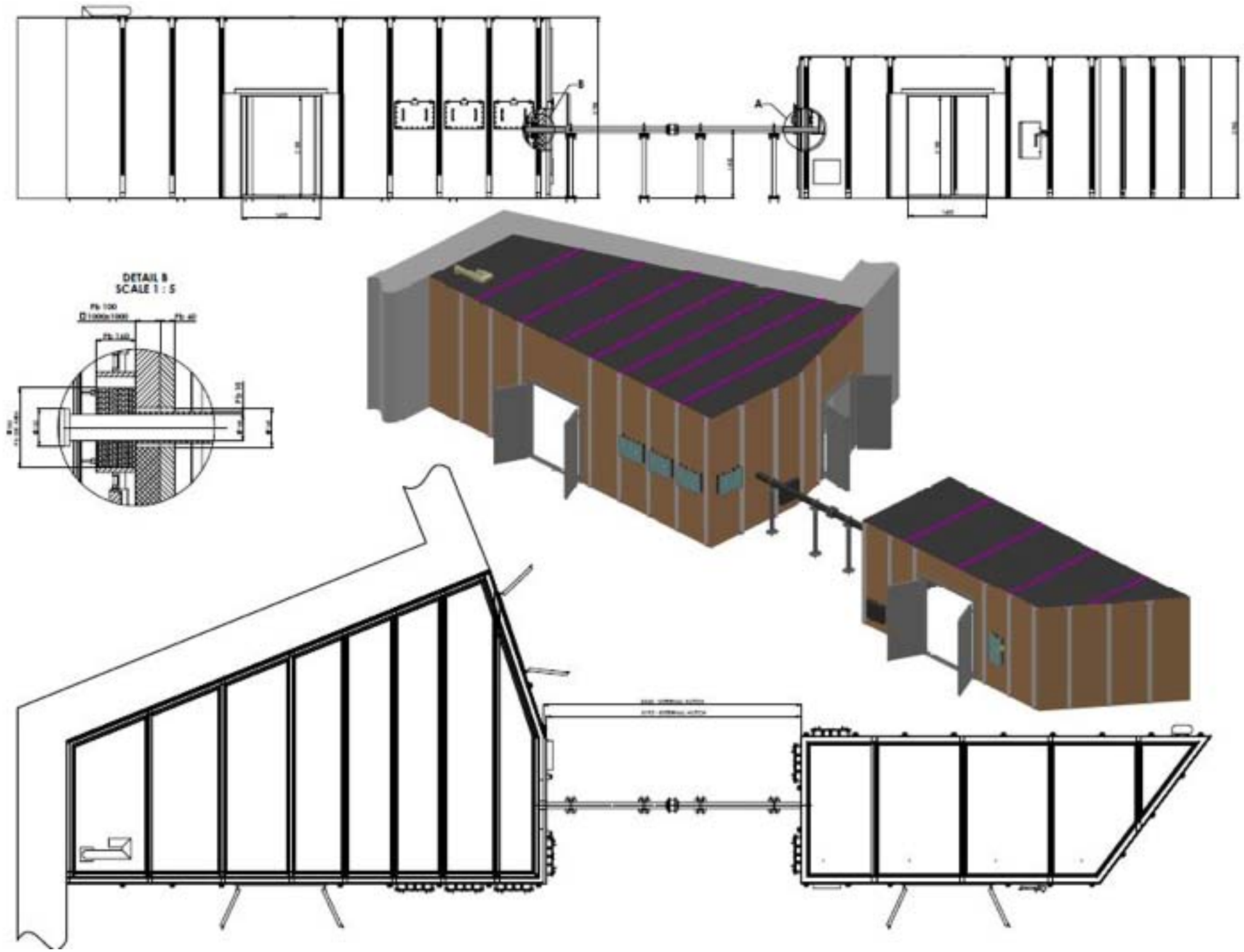
MS wiggler inside the storage ring



Overall W61 length (m)	**2**
Wiggler gap (mm)	***12***
Period length (mm)	***60.5***
Number of periods	***33***
Magnetic material	***NdFe:B***
Pole material	***CoFe***
Maximum field (T)	***1.4***
Deviation parameter K	***7.8***
Critical energy (keV)	***5.8***
Total power @ 400mA (KW)	***6.01***

Materials Science Beamline

Pb Hutches: under construction, installation in November, 2017



Materials Science Beamline

Experimental Station

- Donation of a Dectris 300k detector (to be used for time/ temperature dependent studies)
- BL scientist in contact with various European groups to get advise on technical solution

Beamline to be ready in spring 2018

Macromolecular Crystallography

The joint SESAME-Jordan University proposal submitted to the Jordanian Scientific Research Support Fund was approved with a financial support of 1.5 MJOD (~2.1 M$) in three years. The first allocation of 500 kJOD is available and used for the source (in vacuum undulator).

The IVU technical specs are in the final revision stage and were developed by Hossein Khosroabadi (SESAME) in close collaboration with Hamed Tarawneh (MAX IV)

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Ma ny

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The IVU techn ge and were developed by H collaboration with Hamed Tara

رئاسة الوزراء

الرقم ..... ٧٠ / ١/٨ / ١١٢٨
التاريخ ٢٦ / ربيع الأول / ١٤٣٧
الموافق ٢٠١٦/٠١/٠٧

معالي وزير التعليم العالي والبحث العلمي/
رئيس مجلس إدارة صندوق دعم البحث العلمي

أشير إلى كتابكم رقم ص٤/٢٣٨٨ تاريخ ٢٠١٥/١٢/٣٠.

استعرض مجلس الوزراء كتاب معاليكم المشار إليه أعلاه وبناء على تنسيب مجلس إدارة صندوق دعم البحث العلمي بقراره رقم (٢٠١٥/٣٦٧) تاريخ ٢٠١٥/١٠/٢٨، قرر مجلس الوزراء في جلسته المنعقدة بتاريخ ٢٠١٦/١/٦ ـ بالاستناد لأحكام المادة (١٨/أ) من تعليمات دعم البحث العلمي رقم (١) لسنة ٢٠١٢ ـ الموافقة على اعتبار المشروع البحثي "الصحة والصيدلانيات في الأردن: تطبيق في مختبر للتركيبات البيولوجية" مشروعاً وطنياً، وتقديم دعم مالي له لمدة ثلاث سنوات بمبلغ إجمالي مقداره (١٥٠٠٠٠٠) مليون وخمسمائة ألف دينار من صندوق دعم البحث العلمي، لتغطية تكاليف التجهيزات الأساسية المتعلقة ببناء خط بحثي (Beam Line) بما في ذلك الأجزاء البصرية (Beam Optics)، على أن يقوم مركز سيسامي (SESAME) بتجهيز الخط البحثي أعلاه في مدة أقصاها ثلاث سنوات.

واقبلوا فائق الاحترام.

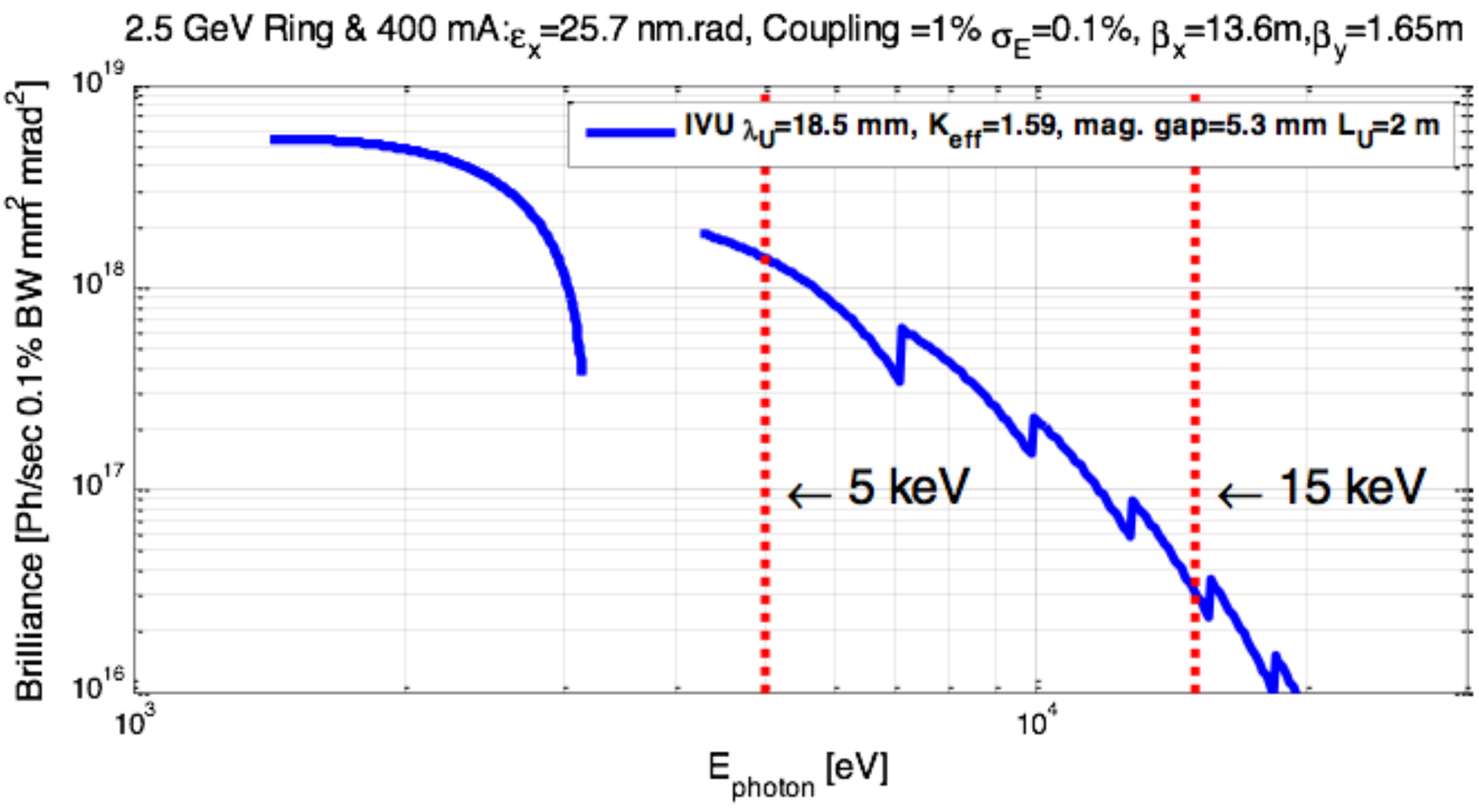
رئيس الوزراء

المملكة الأردنية الهاشمية
وزارة التعليم العالي والبحث العلمي
١٠ كانون الثاني ٢٠١٦
رقم السجل : ٣٤٣
رقم الملف : ٤/١٠

صندوق دعم البحث العلمي

نسخه/إلى معالي وزير المالية
نسخه/إلى عطوفة رئيس ديوان المحاسبة
نسخه/إلى عطوفة أمين سر مجلس الوزراء
قرار رقم (١٣٤٢٢)
ر إ ١/٥

Macromolecular Crystallography: the 18.5 mm IVU



Simulated brilliance of the IVU18 for the MX beamline for 18.5 mm period length and minimum magnetic gap of 5.3 mm. The phase error of 2.5 degree has been considered in this simulation.

SESAME “Call 0”

SUP: the SESAME version of the Elettra VUO

SUP – Welcome to SESAME Use...

https://sup.sesame.org.jo/pls/vuo/guest.startup

Search

SESAME

SUP - SESAME User Portal

SUP - Welcome to SESAME User Portal

The SESAME User Portal (SUP) is the general access tool to the experimental infrastructures of SESAME. Users already registered in SUP need **to login** in order to submit a proposal for beam time.

If you already have a user account, but you do not remember your identification code (User ID) and/or password please do not try to register again but click **here** to retrieve the lost information via e-mail.

New users wishing to submit a proposal need to **register** in SUP to obtain a user account. This is generated automatically by the SUP system, and the user receives an identification code (User ID) and password by e-mail.

SUP allows you to:

- update registration details
- submit proposals for beam time
- submit details of the samples, hazards and equipment for beam time sessions
- participate in a SESAME experiment as an experimentalist
- give user feedback - BEST (BEam time SaTisfaction)
- submit experimental reports and publications
- apply for funding
- book guesthouse rooms

The back and forward buttons of your browser are NOT TO BE USED when in SUP as this may result in duplicated data and/or problems or malfunctions.

In case of problems using SUP, please ensure that javascript is enabled in your browser.

SESAME | Synchrotron-light for Experimental Science and Applications in the Middle East

Address:
P.O. Box 7
Allan 19252
Jordan

Other contact information:
Telephone: (+962-5) 3511348, ext. 228
Fax: (+962-5) 3511423
www.sesame.org.jo

Useful links on SESAME website:
SESAME User Policy
Evaluation of Proposals

DEVELOPED BY Elettra Sincrotrone Trieste

SUP contacts | Disclaimer | Privacy policy

More than 150 registered users
55 submitted proposals

Country	XAFS/XRF	IR	Total
COLOMBIA	0	1	1
CYPRUS	1	2	3
EGYPT	6	4	10
FRANCE	0	1	1
IRAN, ISLAMIC REPUBLIC OF	2	3	5
ITALY	1	1	2
JORDAN	2	2	4
KENYA	2	0	2
PAKISTAN	7	4	11
PALESTINIAN AUTHORITY	0	1	1
SWEDEN	1	0	1
TURKEY	14	0	14
TOTAL	**36**	**19**	**55**

Distinguished international experts accepted to be members of the SESAME Proposal Review Committee (PRC)

- Sofia Diaz-Moreno (DIAMOND, XAFS/XRF)
- Tom Ellis (Un. of Saskatchewan, IR)
- **Samar Hasnain (Un. of Liverpool, XAFS/XRF), Chair**
- Carol Hirschmugl (Un. of Wisconsin, IR)
- Bruce Ravel (NIST@NSLS-II, XAFS/XRF)
- Lisa Vaccari (Elettra, IR)

Proposals are under evaluation

SUC (SESAME Users' Committee

The purpose of the SESAME Users' Committee, hereinafter referred to as the "SUC", is to promote research at SESAME by providing a platform for interaction between those who use SESAME for their research and the SESAME management, and for communication between the users and with users of other synchrotron radiation laboratories.

Within this framework:

- the SUC, representing researchers from the SESAME Members, will have a channel through which it may communicate to the SESAME management information on the requirements and wishes of users of the SESAME Members; and
- the SESAME management will have a platform through which it may bring to the attention of users information on current and future plans for the facility.

OPEN SESAME

Approved 3 year project, starting on January 1 2017

Participant No.	Participant organisation name	Country
1	Installation Europeenne de Rayonnement Synchrotron (ESRF)	FR
2	Consorcio para la Construcción, Equipamiento y Explotación del Laboratorio de Luz Sincrotrón (CELLS)	ES
3	The Cyprus Institute (CYI)	CY
4	Deutsches Elektronen-Synchrotron (DESY)	DE
5	Sincrotrone Trieste (ELETTRA)	IT
6	Istituto Nazionale Fisica Nucleare (INFN)	IT
7	Instruct Academic Services Limited (Instruct)	UK
8	Synchrotron-light for Experimental Science and Applications in the Middle East (SESAME)	JO
9	Société Civile Synchrotron Soleil (SOLEIL)	FR
10	European Organization for Nuclear Research (CERN)	CH
11	Centre National de la Recherche Scientifique (CNRS)	FR

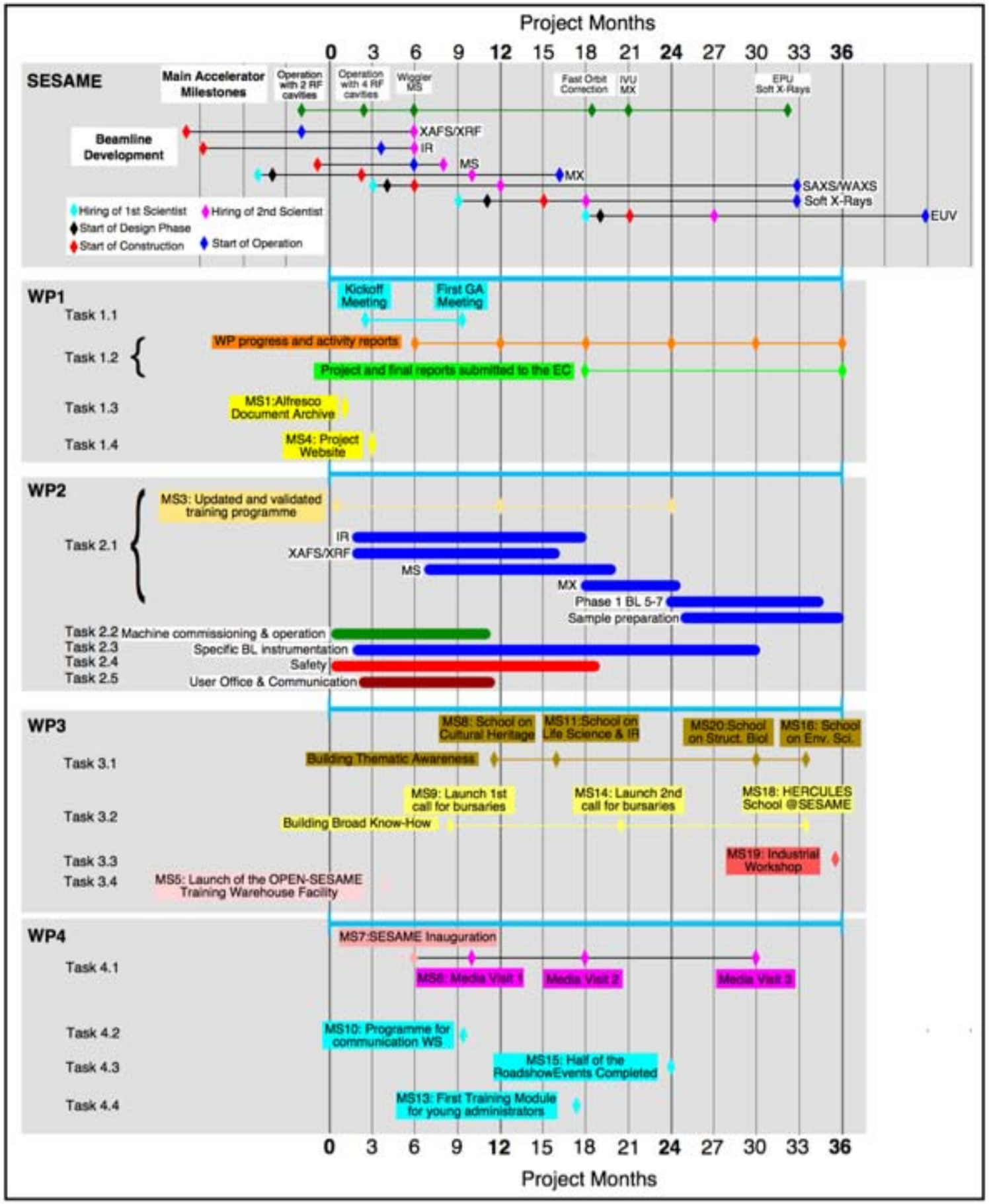
OPEN SESAME
strong links with the SESAME development plans

WP1: Management and dissemination

WP2: SESAME staff training and exchange programme

WP3: Building user capacity in the local science and technology landscape

WP4: Integration of SESAME into public and social-economic landscapes



- Users Meetings, Workshops, Individual Training (Visits, Fellowships..)
- Funding from

International Organisations: IAEA, UNESCO, ICTP, ESRF

External National Organisations & Synchrotron Labs: Brazil, France, Germany, Italy, Japan, Portugal, Spain, Sweden, Switzerland, Taiwan, UK, USA (DoE)

Organisations from Member States: Cyprus, Egypt, Iran, Israel, Jordan, Turkey

Scientific Societies: APS + EPS + IOP + DPG + ACS + NAS

Foundations: Lounsbery

LinkSCEEM Project (Cyprus): High Performance Computing (HPC) in the Eastern Mediterranean Region

Topics include: Accelerator Physics , Beamlines, Scientific Applications

International Support

ANKA, Germany
Brazilian Light Source, Brazil
Elettra, Italy
ESRF, France
Daresbury Laboratory, UK
DESY, Germany
LURE, FRance
MAX-Lab, Sweden
Swiss Light Sourse, Switzerland
ALBA-Cells, Spain
Diamond, UK
Taiwan Light Source, Taiwan
SOLEIL, France

UNESCO
DoE, USA
IAEA
ICTP
APS-EPS-IoP-DPG -SIF
JSPS
Portugal
Canon Foundation
Lounsbery Foundation

Conclusions

There are challenges

Stable financial support; attracting new members from the Gulf and the Mahgreb (new members are welcome); making up for the shortage in the human and financial resources of the members; solving problems involving travel restrictions; finding funding for provision of full energy and current, conference centre, full suite of Phase I beamlines,….

But great progress has been achieved

SESAME is working politically and technically

The training program is building capacity in the region

The voluntary contributions (agreed March 2012) constitute a major step forward and make it possible to plan for commissioning to begin in 2016.

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Further information:
giorgio.paolucci@sesame.org.jo