SESAME

A Source of Light in the Middle East

Dr. Khaled Toukan

Director of SESAME

January 13, 2025

SESAME

Why Build a Synchrotron Facility?

- International collaboration is an obvious way for countries with relatively small scientific communities and/or limited science budgets to build a synchrotron-light source.
- Broad programs make synchrotron-light sources ideal facilities for building scientific capacity.
- SESAME will be a user facility; scientists will typically go to SESAME two or three times a year for a week or two to carry out experiments, in collaboration with scientists from other institutions/countries.

SESAME as a Project

United Nations
Educational, Scientific and
Cultural Organization

SESAME is a cooperative venture by scientists and governments of the region set up on the model of CERN (European Organization for Nuclear Research), although it has very different scientific aims.

It was developed under the auspices of UNESCO (United Nations Educational, Scientific and Cultural Organization) following the formal approval given for this by the Organization's Executive Board (164th session, May 2002).

SESAME Members and Observers

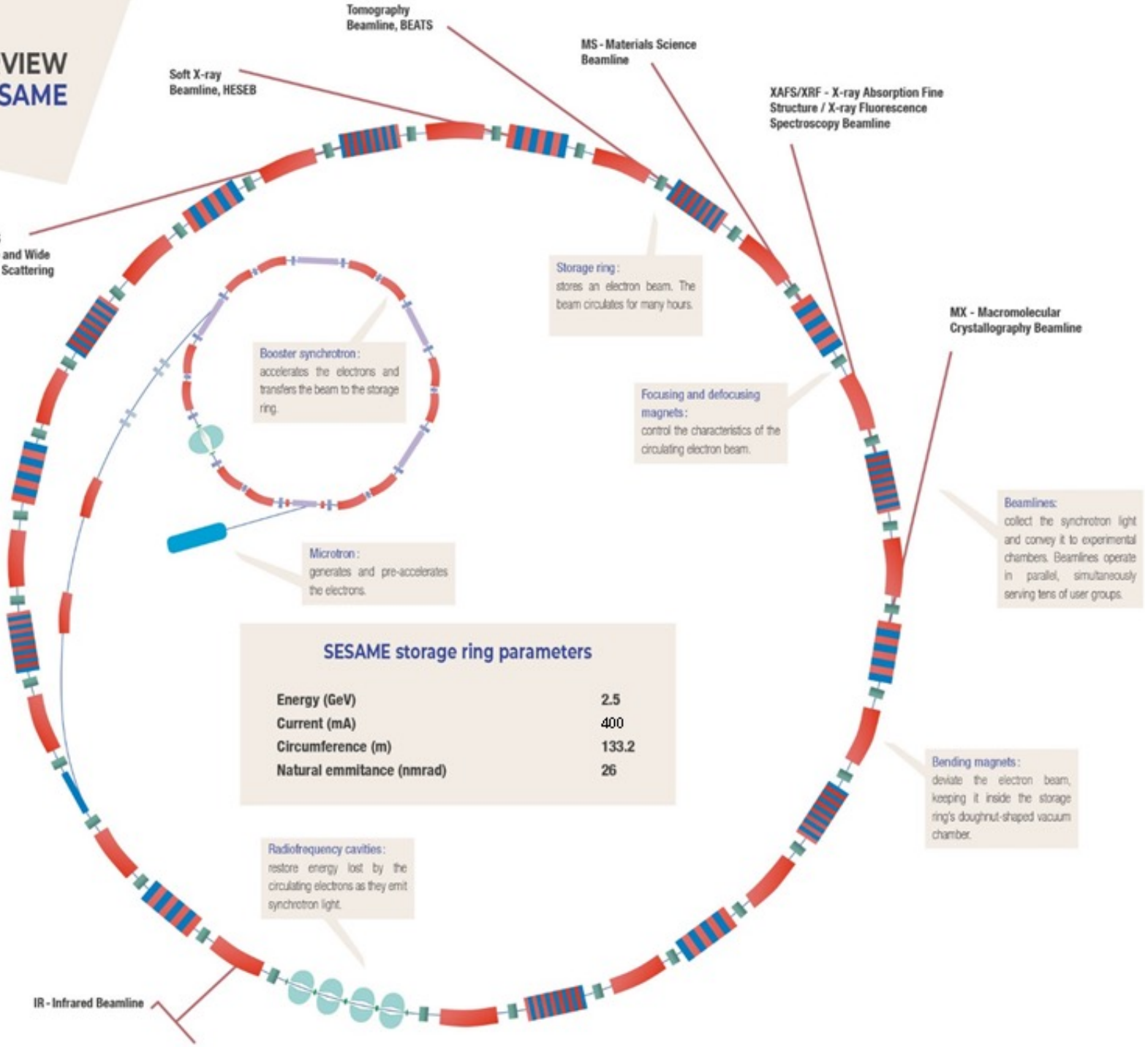
Members:

Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, Palestine, Turkey

Observers:

Brazil, Canada, CERN, China, EU, France, Germany, Greece, Italy, Japan, Kuwait, Portugal, Russia, Spain, Sweden, Switzerland, UAE, UK and USA

SCHEMATIC OVERVIEW OF SESAME



Synchrotron light is emitted by the circulating electrons as their trajectories are deflected. It can be used to carry out research in fields ranging from medicine and biology, through materials science, physics and chemistry to healthcare, the environment and archaeology.

SESAME storage ring parameters

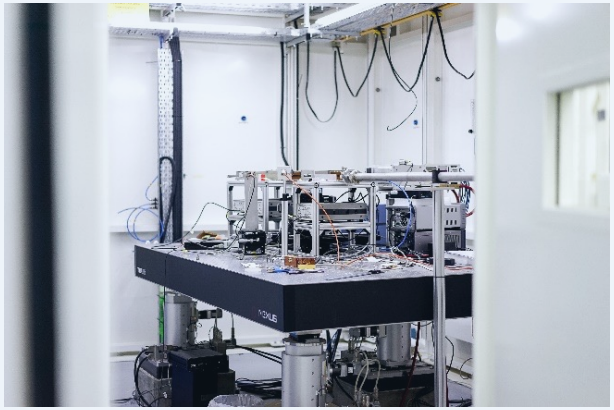
Energy (GeV)	**2.5**
Current (mA)	**400**
Circumference (m)	**133.2**
Natural emmitance (nmrad)	**26**

SESAME

His Majesty King Abdullah II following the opening of SESAME, flanked by Heads of the delegations of the SESAME Members and Directors of International Organisations that have supported SESAME. To the KIng's left, HRH Princess Sumaya of Jordan, who headed the Jordanian delegation, and Fabiola Gianotti, Director General of CERN; to the right, Irena Bokova, Director General of UNESCO, and Carlos Moedas, European Research Commissioner, May 16, 2017.

Five Beamlines in Operation

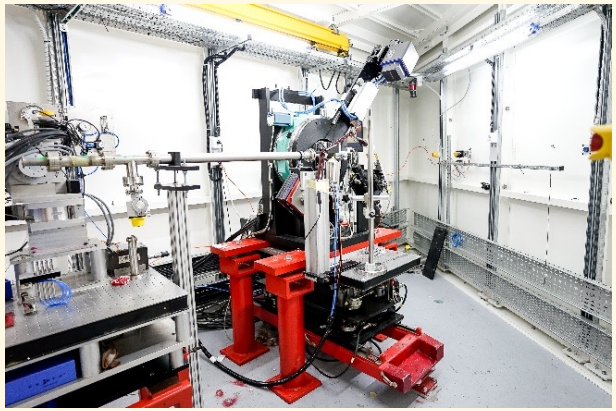
BM02 – IR
Infrared Spectromicroscopy



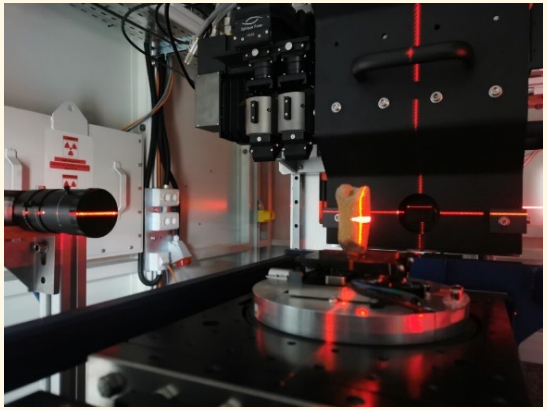
BM08 – XAFS/XRF
X-ray Absorption Fine Structure
X-ray Fluorescence Spectroscopy

Two Bending Magnet Beamlines

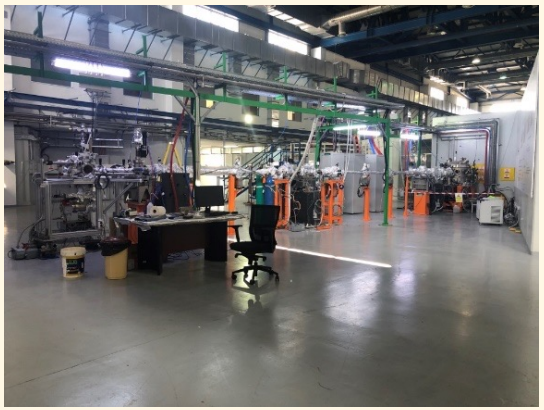
Three Insertion Device Beamlines



ID09 – MS/XPD Materials Science
X-ray Powder Diffraction

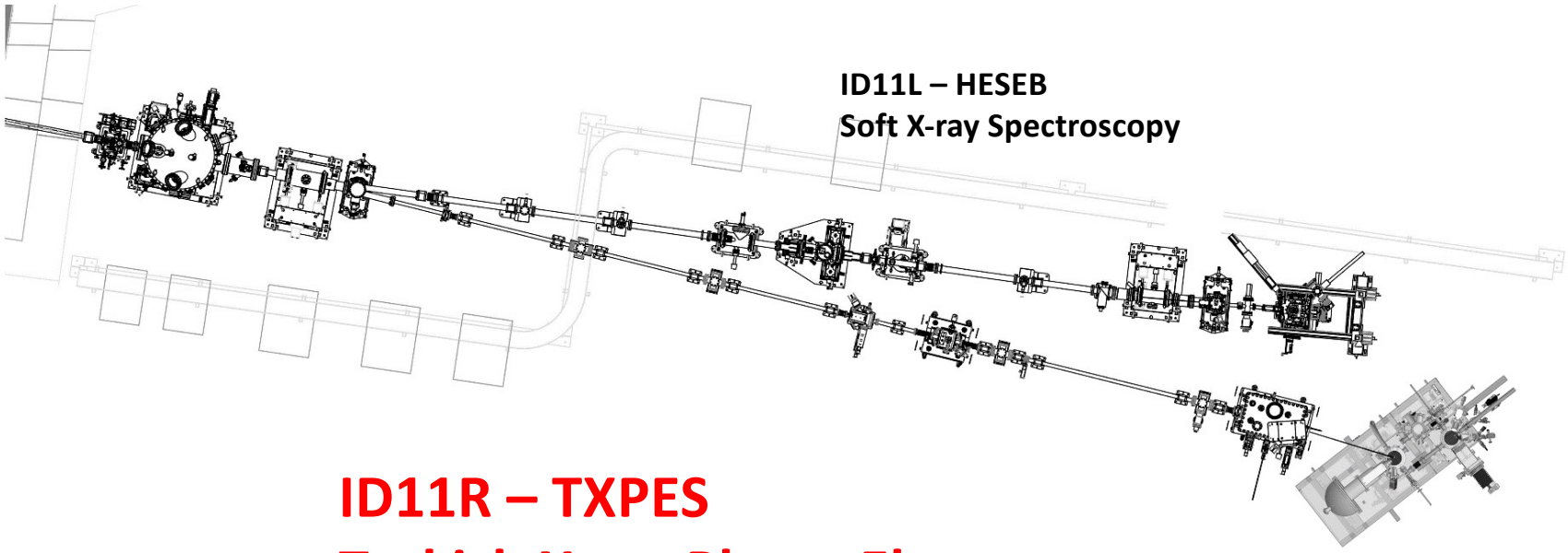


ID10 – BEATS
X-ray Tomography



ID11L – HESEB
Soft X-ray Spectroscopy

One Beamline under Construction

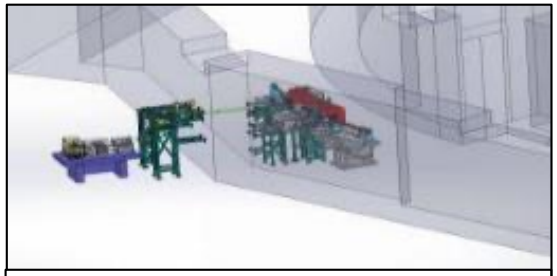


ID11R – TXPES
Turkish X-ray Photo-Electron Spectroscopy

1. BM02 - IR

SESAME's First Fully Designed Beamline

in collaboration with the French Synchrotron, SOLEIL



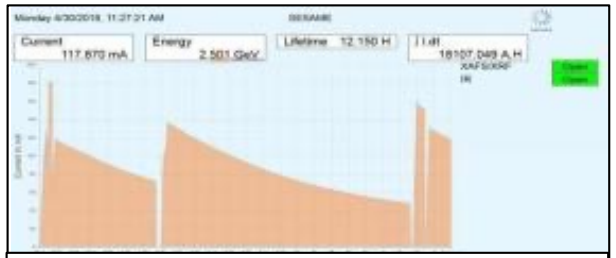
2016: Design Validation

2017: Fabrication (France)

2018: Installation

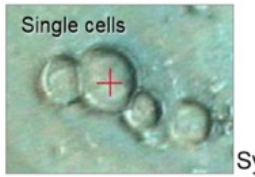
2018: Experimental Hutch

2018: Optical Alignment



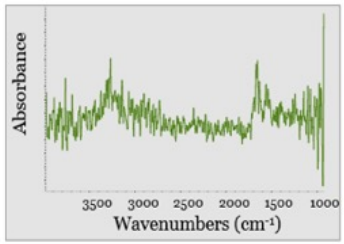
2018: SR-Commissioning

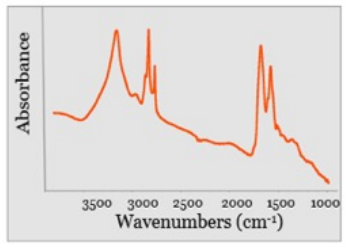
From Paul Dumas, SOLEIL



Globar: 6x6 μm²
1000 scans = 500s

Synchrotron: 6x6 μm²
32 scans = 16 s





DAY-1 Beamline

BEAMLINE SERVING SESAME USERS SINCE NOVEMBER 2018

FIRST RESULTS (April 2018)

1. BM02 - IR cont.

2022: New Microscope and Spectrometer installed in the Experimental Hutch as part of INFN-CHNet.

First Publication from the IR Beamline in February 2020

Journal of Pharmaceutical and Biomedical Analysis 184 (2020) 113186

Contents lists available at ScienceDirect

Journal of Pharmaceutical and Biomedical Analysis

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

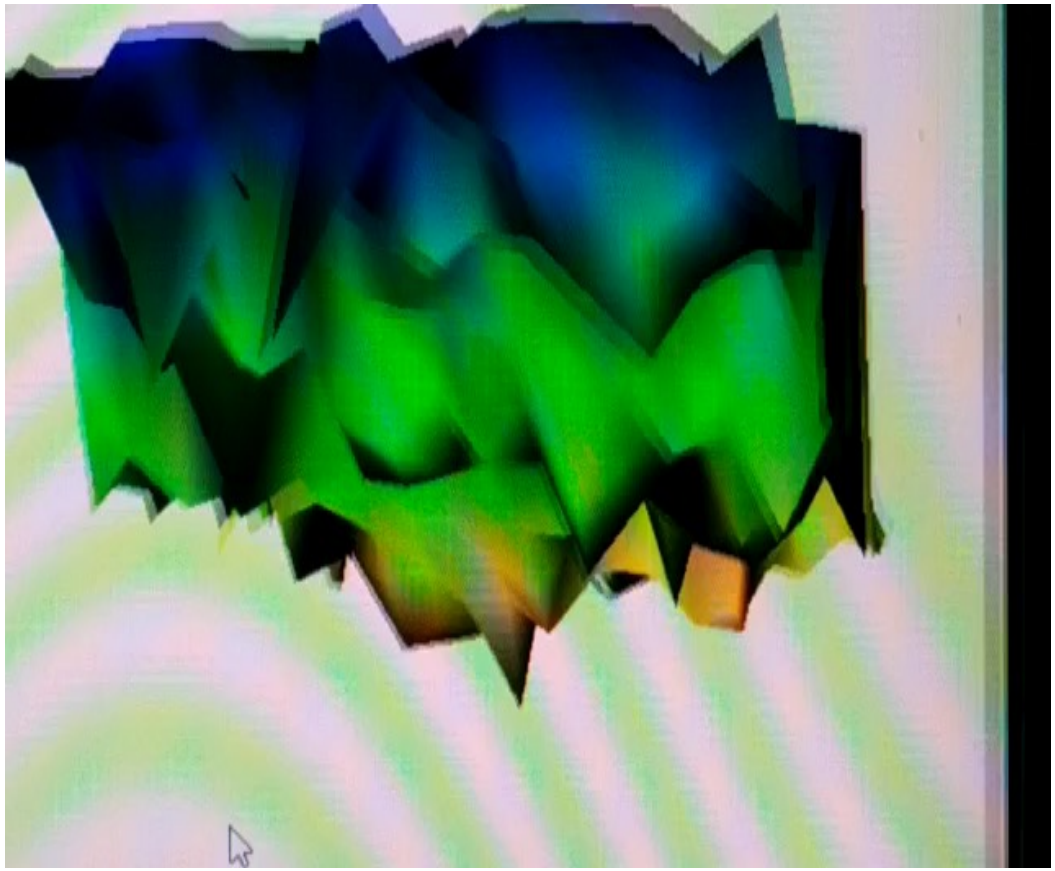
Investigating the molecular structure of placenta and plasma in pre-eclampsia by infrared microspectroscopy

Lina A. Dahabiyeh[a,*], Randa S.H. Mansour[b], Shawqi S. Saleh[c], Gihan Kamel[d,e]

[a] Department of Pharmaceutical Sciences, School of Pharmacy, The University of Jordan, Queen Rania St, Amman, 11942, Jordan
[b] Faculty of Pharmacy, Philadelphia University, 19392, Amman, Jordan
[c] Department of Obstetrics and Gynaecology, School of Medicine, The University of Jordan, 11942, Amman, Jordan
[d] SESAME Synchrotron (Synchrotron-light for Experimental Science and Applications in the Middle East), 19252, Allan, Jordan
[e] Department of Physics, Faculty of Science, Helwan University, Cairo, Egypt

“Analysis of Ancient Mummified Human Head Skin Using SR-IR Micro-spectroscopy”

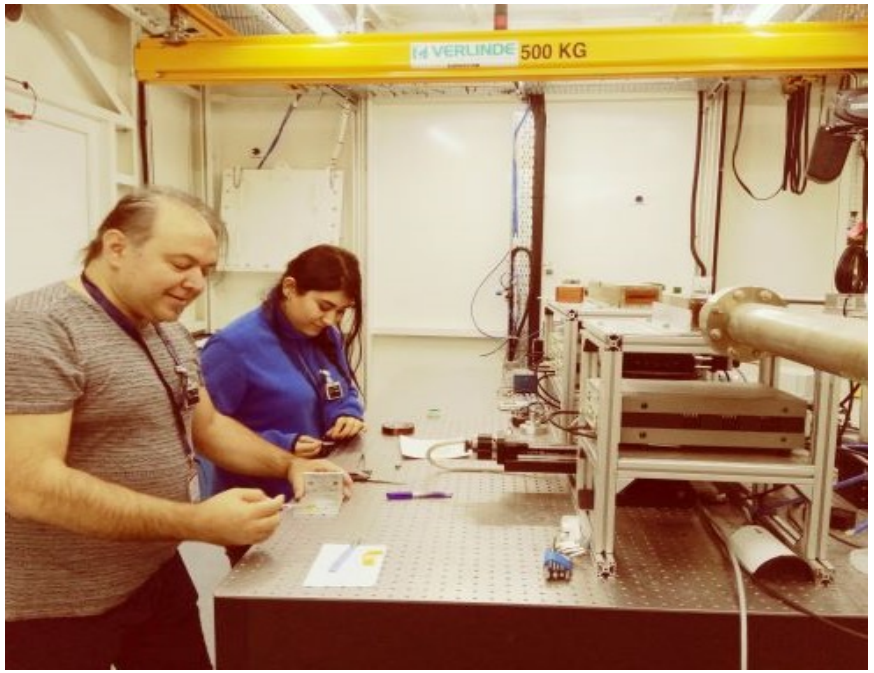
Despina Moissidou (Greece), Hayley Derricott (UK), Barts and the London Medical School (Malta)



2. BM08 - XAFS/XRF

The XAFS/XRF beamline is the first operational beamline at SESAME, and it has been open for external users since July 2018.

Ozensoy's team during a beamtime campaign (group of PhD students) from Bilkent University



Dr. Murat Osman Ozkendir and his MSc. student from Mersin University while changing samples

SESAME

First Scientific Paper Published in June 2019 in a High Impact Factor Journal (11.6)

Applied Catalysis B: Environmental 256 (2019) 117808

Contents lists available at ScienceDirect

Applied Catalysis B: Environmental

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

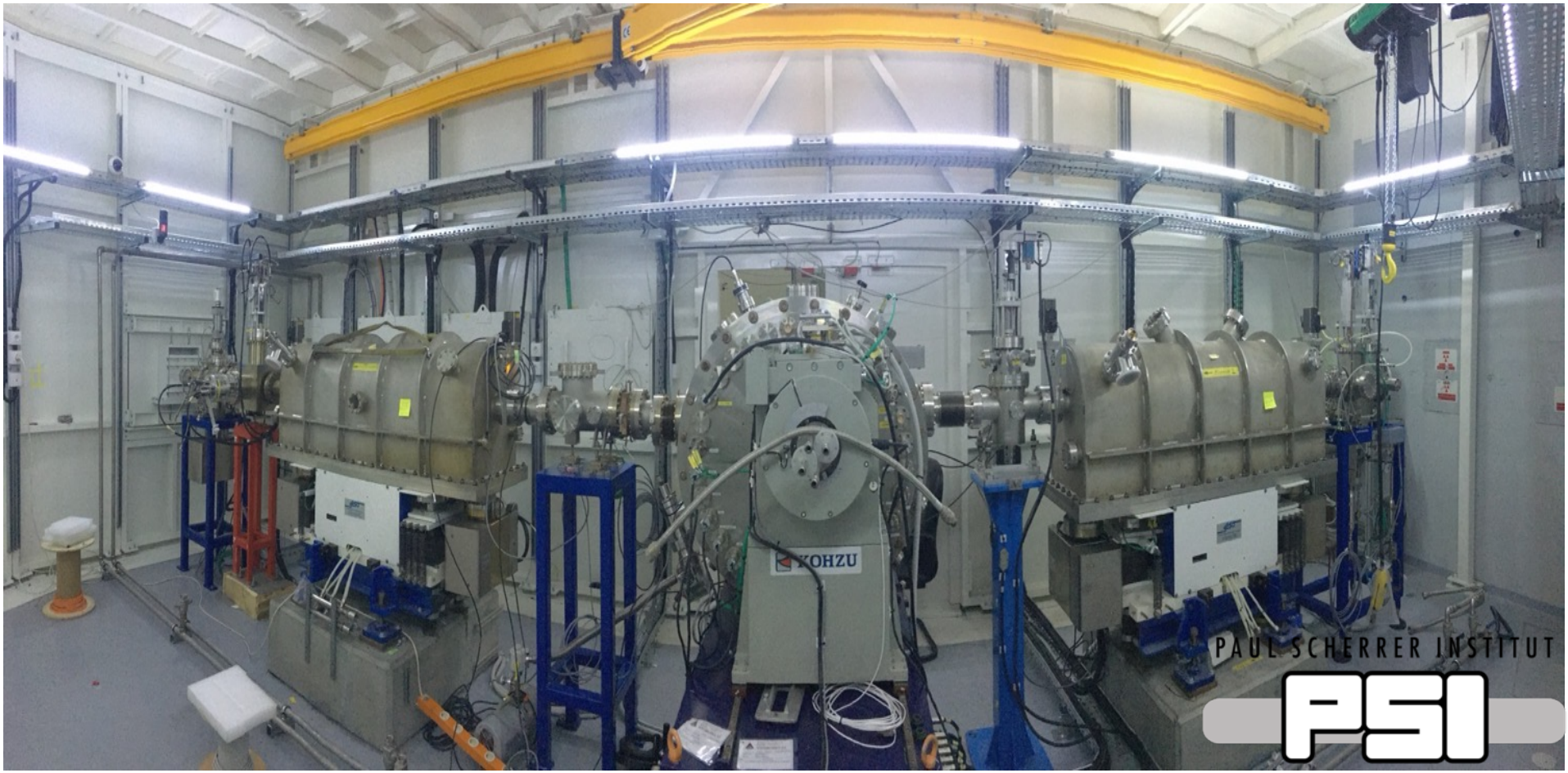
Exceptionally active and stable catalysts for CO_2 reforming of glycerol to syngas

Selin Bac[a], Zafer Say[b,c], Yusuf Kocak[b], Kerem E. Ercan[b], Messaoud Harfouche[d], Emrah Ozensoy[b,e,**], Ahmet K. Avci[a,*]

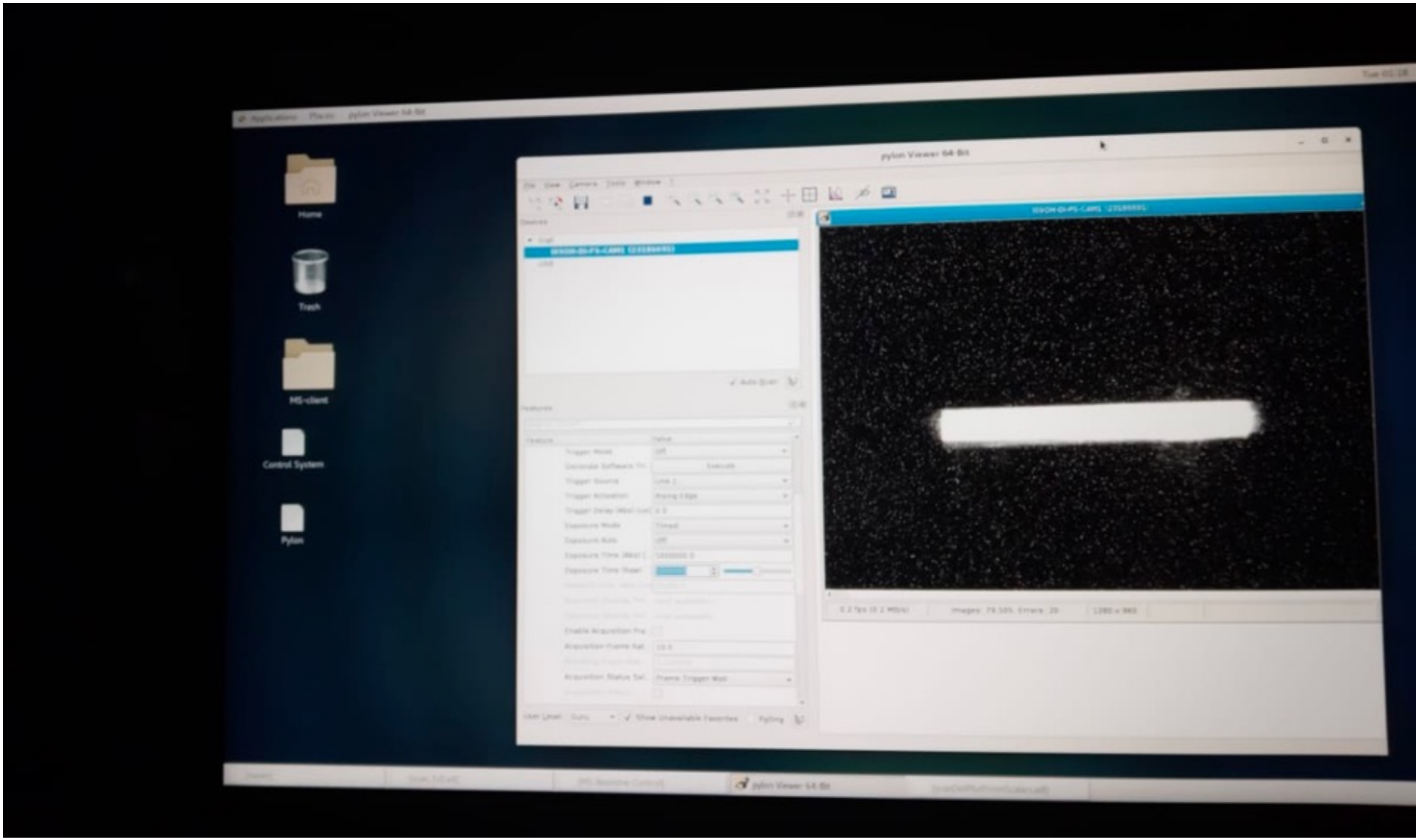
[a] Department of Chemical Engineering, Bogazici University, Bebek, 34342, Istanbul, Turkey
[b] Bilkent University, Department of Chemistry, 06800, Ankara, Turkey
[c] Department of Physics, Chalmers University of Technology, 412 96, Göteborg, Sweden
[d] Synchrotron-Light for Experimental Science and Applications in the Middle East (SESAME), 19252, Allan, Jordan
[e] UNAM-National Nanotechnology Center, Bilkent University, 06800, Ankara, Turkey

SESAME

3. ID09 - Materials Science X-ray Powder Diffraction

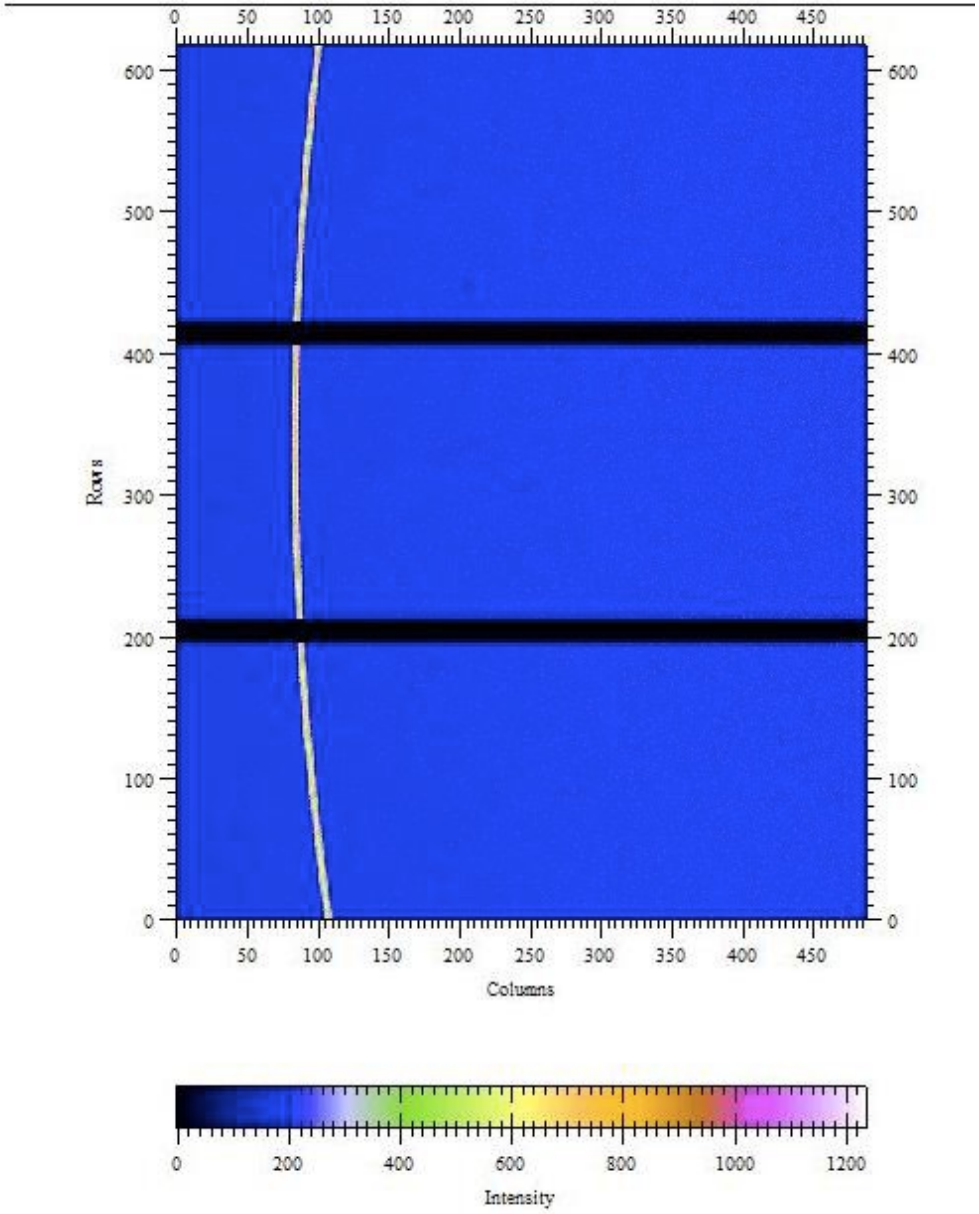


3. ID09 - Materials Science X-ray Powder Diffraction cont.

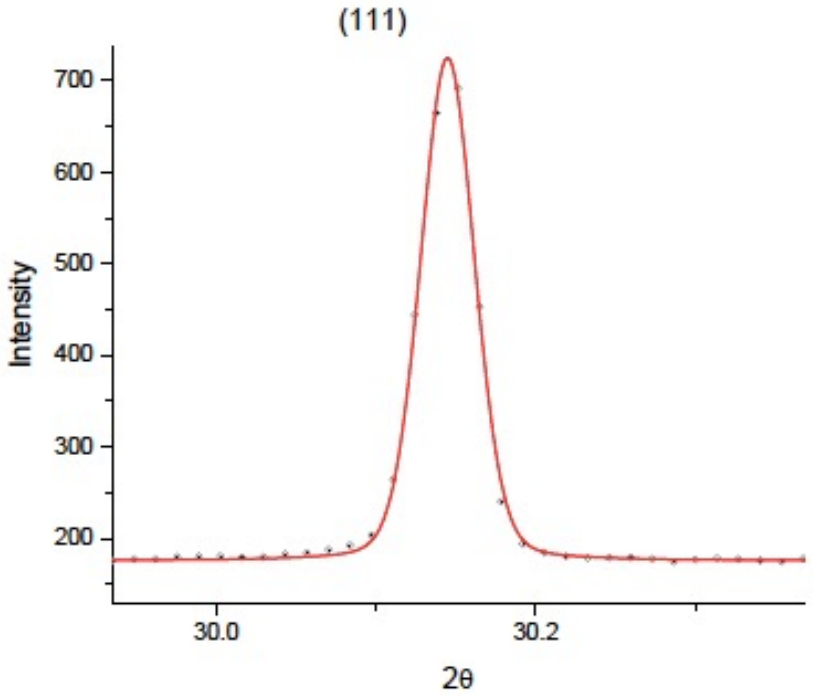


December 3, 2019: First monochromatic beam in experimental hutch

3. ID09 - Materials Science cont.



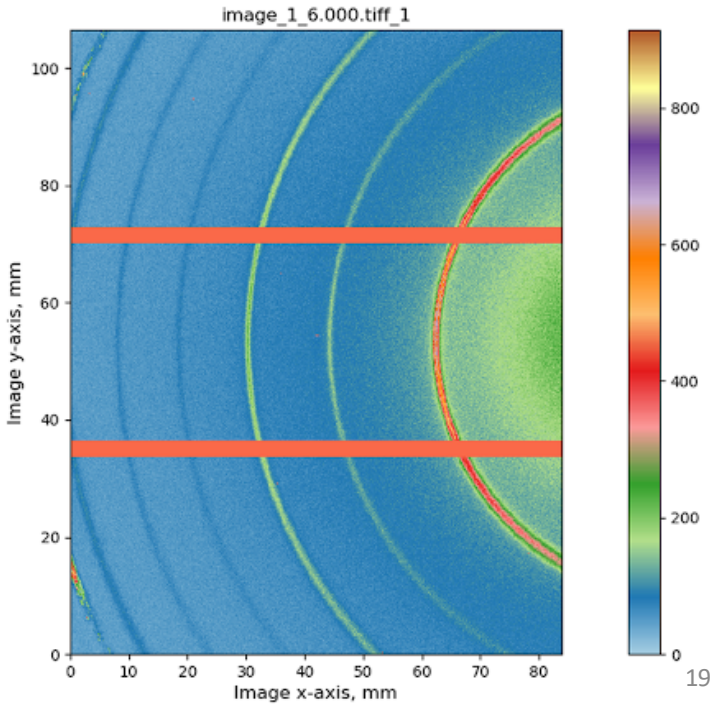
Oct. 22, 2020
First diffraction pattern measured
Silicon standard @ 8 keV



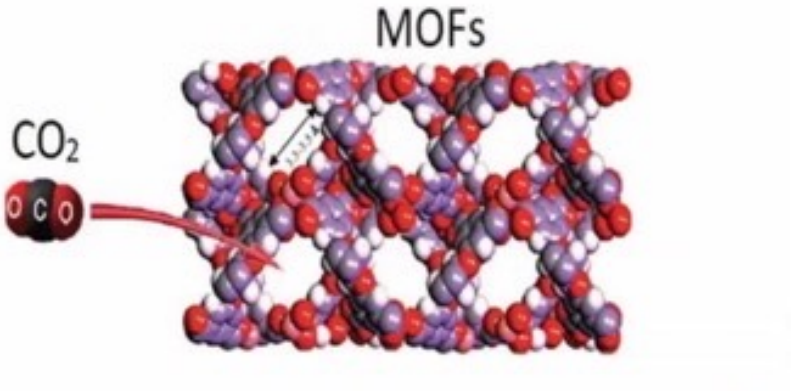
3. ID09 - Materials Science cont.

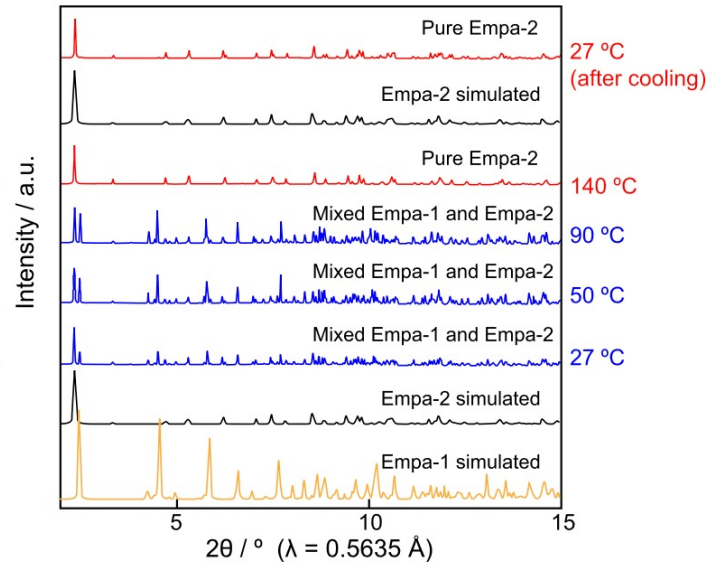
Dec. 17, 2020: MS hosts its first users, a team from the Royal Scientific Society (RSS) for a research focused on the structural properties of novel highly-porous materials for use in mitigating the effects of climate change.

RSS research team (from left to right: Ala'a Al- Ghourani and Kyle Cordova) with Mahmoud Abdellatief from SESAME at the MS beamline control hutch.



3. ID09 - Materials Science cont.



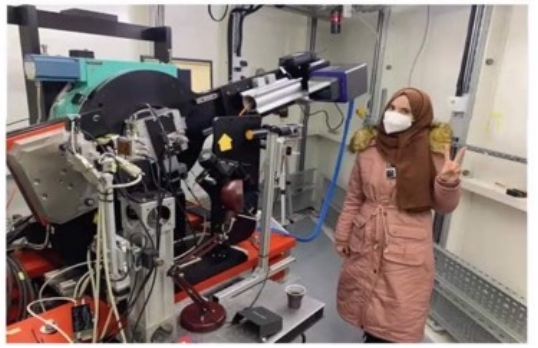


ACS MATERIALS LETTERS

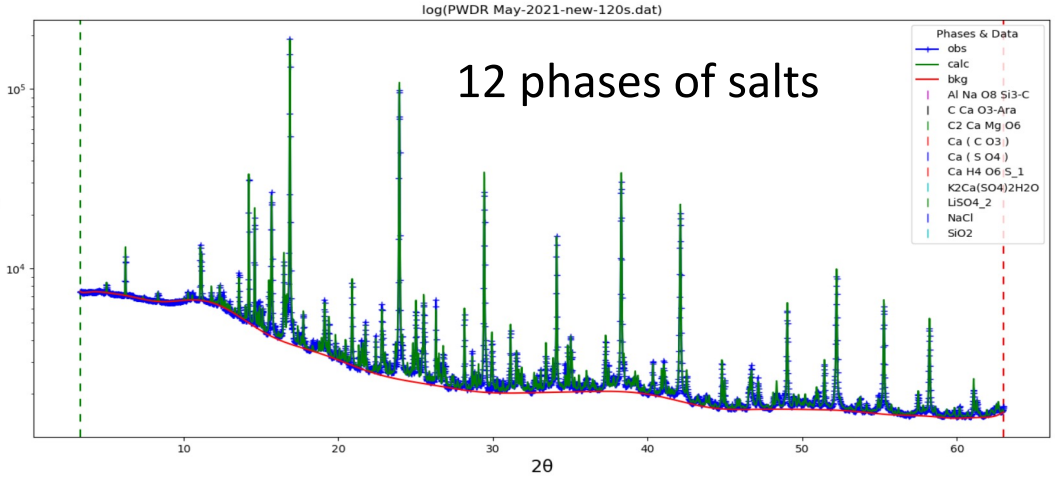
www.acsmaterialsletters.org

Robust Barium Phosphonate Metal–Organic Frameworks Synthesized under Aqueous Conditions

Khalifah A. Salmeia,* Simone Dolabella,‡ Dambarudhar Parida,‡ Terry J. Frankcombe, Akef T. Afaneh, Kyle E. Cordova, Bassem Al-Maythalony, Shanyu Zhao, Romain Civioc, Ali Marashdeh, Bernhard Spingler, Ruggero Frison, and Antonia Neels*



3. ID09 - Materials Science cont.



PNAS RESEARCH ARTICLE | CHEMISTRY OPEN ACCESS

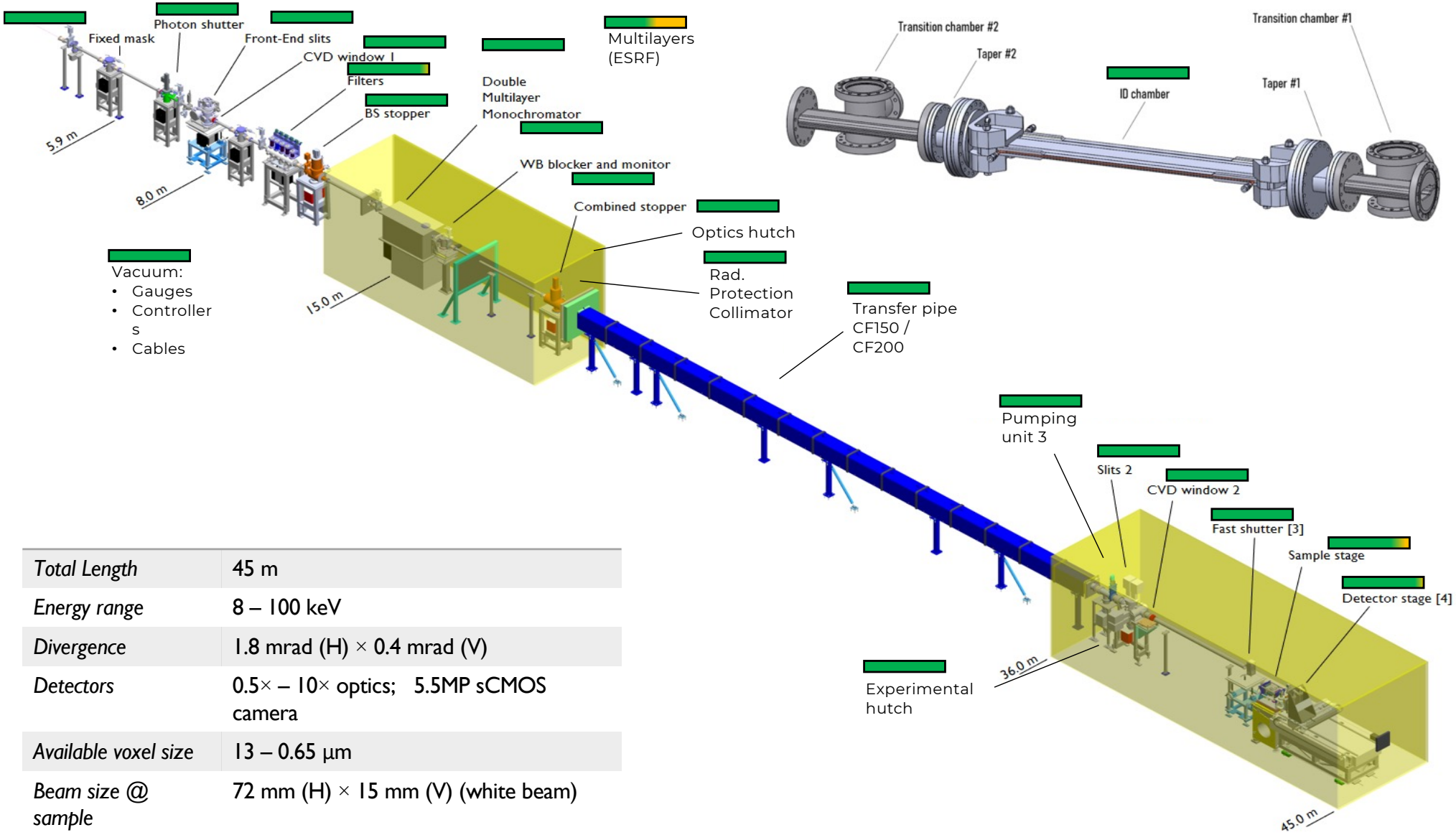
Harvesting of aerial humidity with natural hygroscopic salt excretions

Marieh B. Al-Handawi [a], Patrick Commins [a], Robert E. Dinnebier[b], Mahmoud Abdellatief[c], Liang Li[a,d,1], and Panče Naumov [a,e,f,g,1]

4. ID10 - Beamline for Tomography at SESAME (BEATS)

- The project is an H2020-EU funded project of €6.0 million to pave the way for an efficient and sustainable operation of SESAME.
- Led by the ESRF, the European synchrotron (France), BEATS involves leading research facilities in the Middle East (SESAME and the Cyprus Institute), and European synchrotron radiation facilities ALBA-CELLS (Spain), DESY (Germany), the ESRF (France), Elettra (Italy), INFN (Italy), PSI (Switzerland), SESAME (Jordan) and SOLARIS (Poland).
- Aims at serving user communities in the region, in particular the cultural heritage and archaeology communities. It is an obvious advantage for these communities to be able to access a state-of-the-art beamline close to the source of samples or remains to be analyzed.

4. ID10 - BEATS cont.



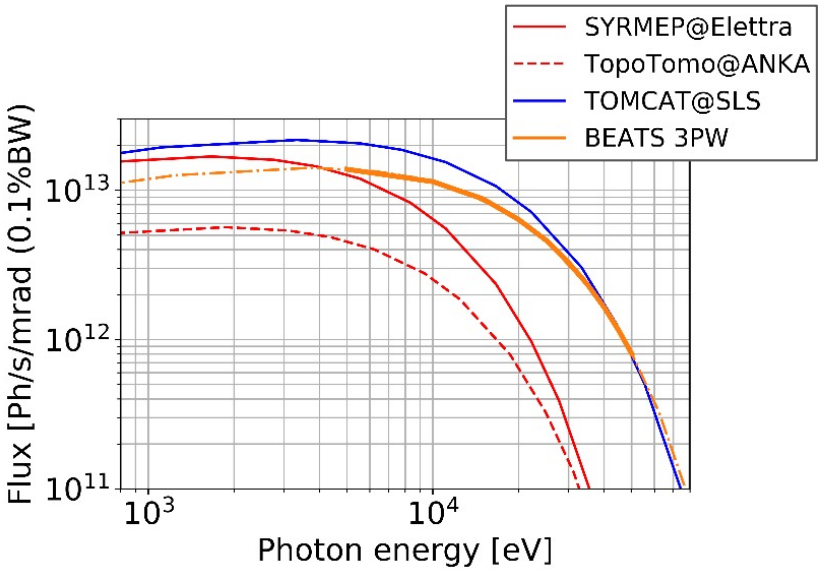
Total Length	45 m
Energy range	8 – 100 keV
Divergence	1.8 mrad (H) × 0.4 mrad (V)
Detectors	0.5× – 10× optics; 5.5MP sCMOS camera
Available voxel size	13 – 0.65 µm
Beam size @ sample	72 mm (H) × 15 mm (V) (white beam)
Modalities	• Filtered white beam • Monochromatic (with DMM)

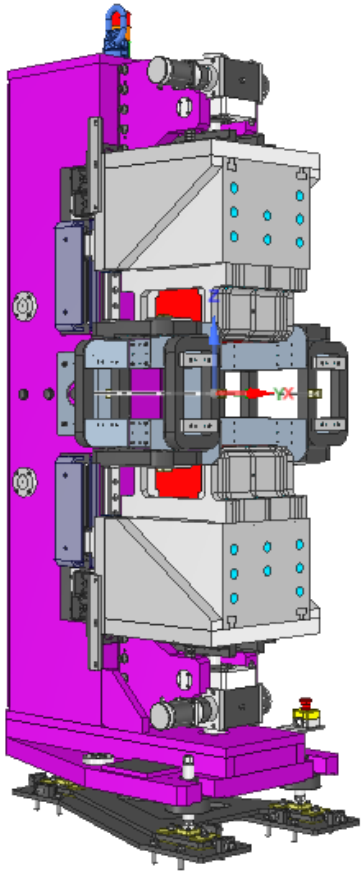
4. ID10 - BEATS cont.

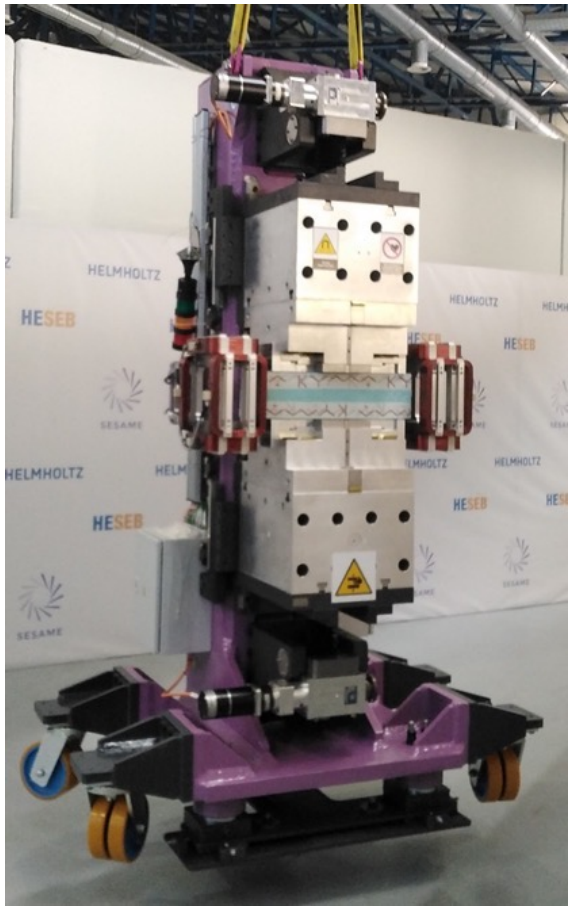
BEATS X-ray source

3-pole wiggler

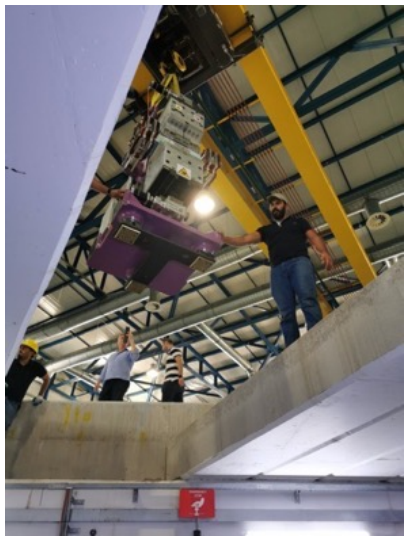
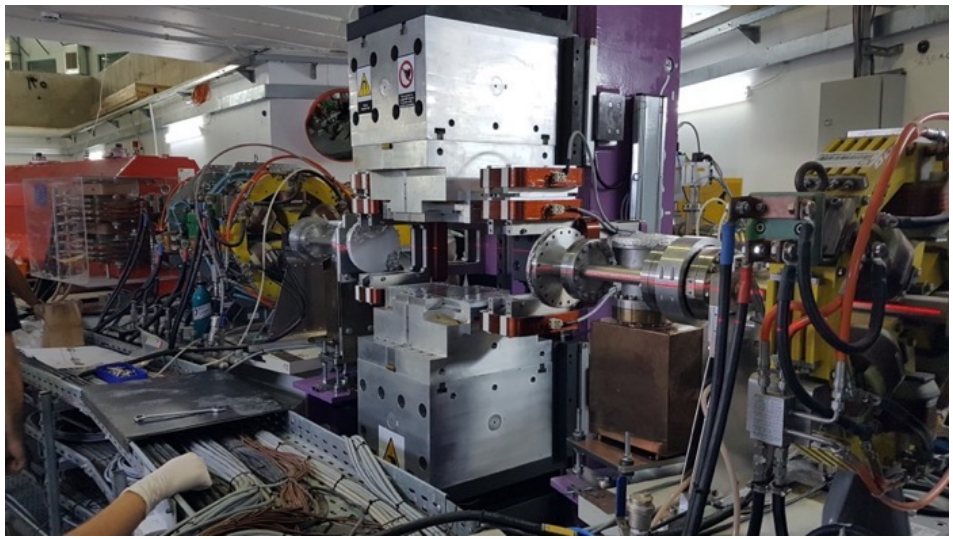
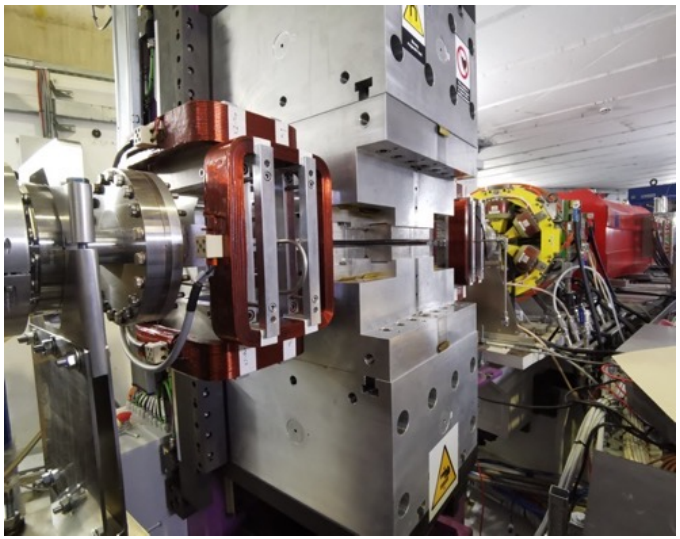
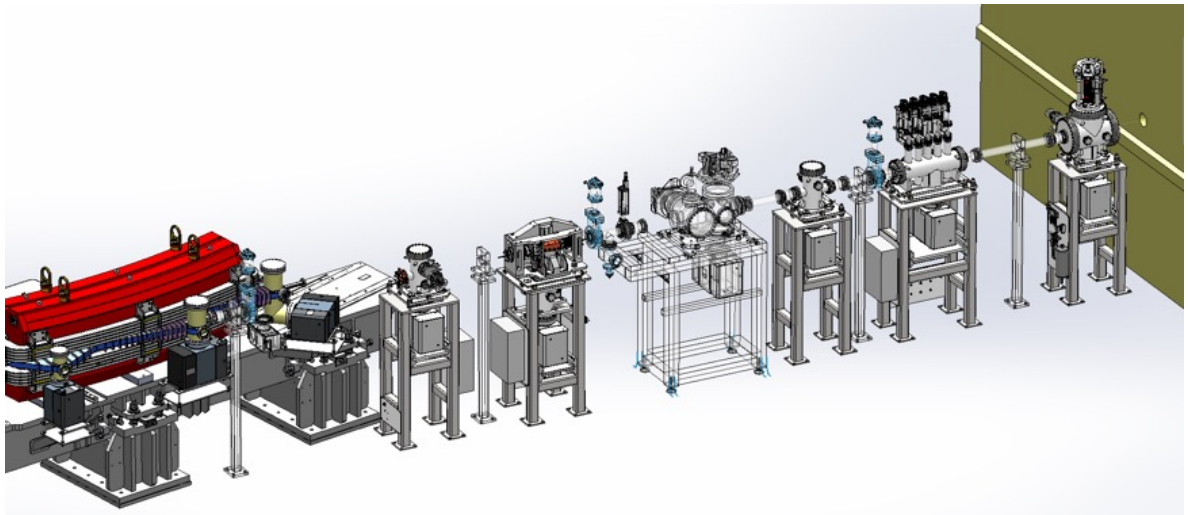
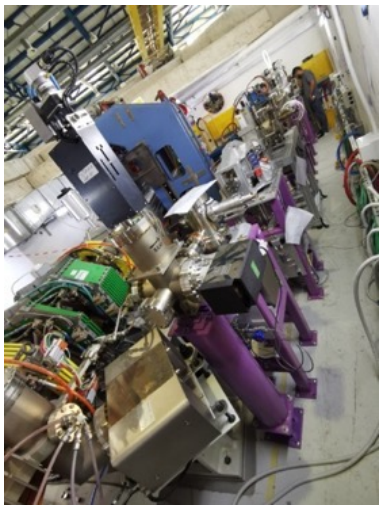
- Minimum gap: 11 mm ✓
- Maximum field: 2.92 T ✓
- Magnetic length: 0.4 m ✓





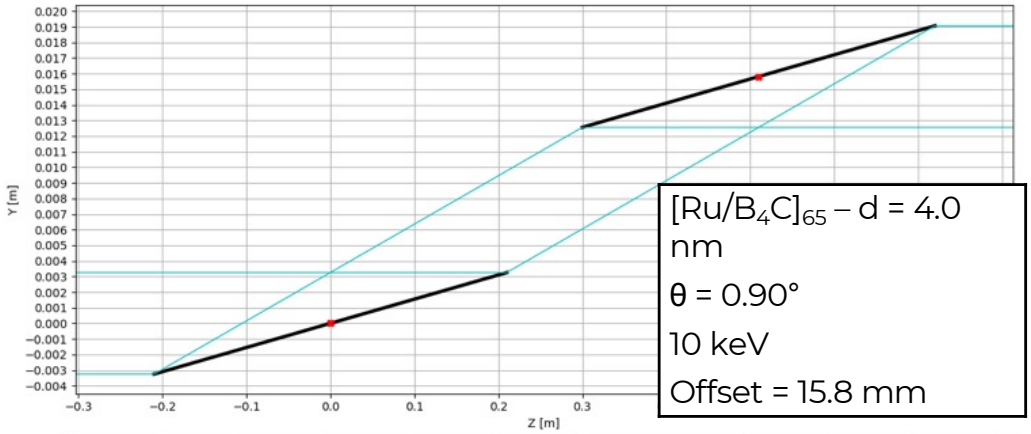


4. ID10 - BEATS cont.

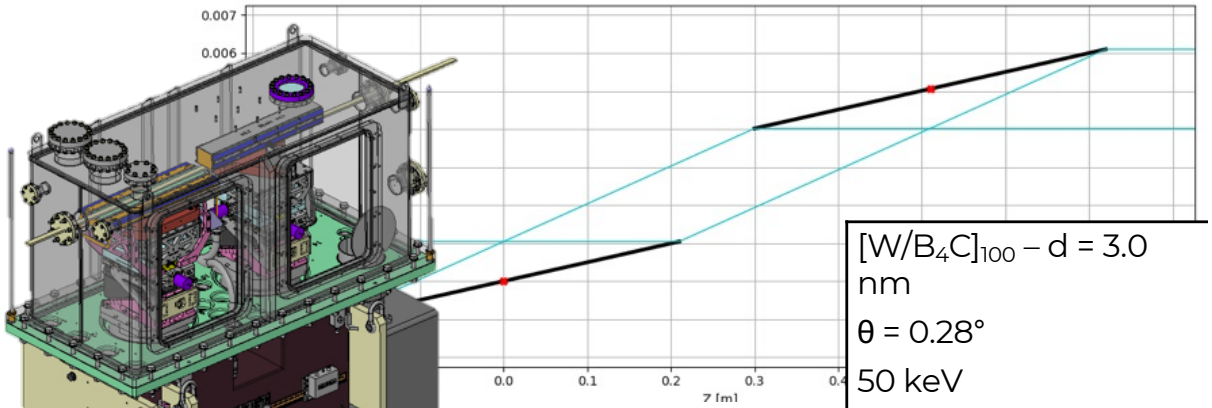






AUGUST-SEPTEMBER 2022 shutdown
ID and front-end installation

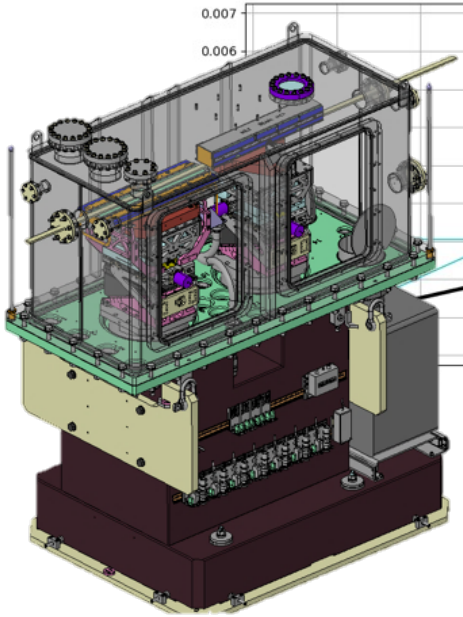
4. ID10 - BEATS cont.



$[Ru/B_4C]_{65}$ – d = 4.0 nm
θ = 0.90°
10 keV
Offset = 15.8 mm



$[W/B_4C]_{100}$ – d = 3.0 nm
θ = 0.28°
50 keV
Offset = 5.0 mm

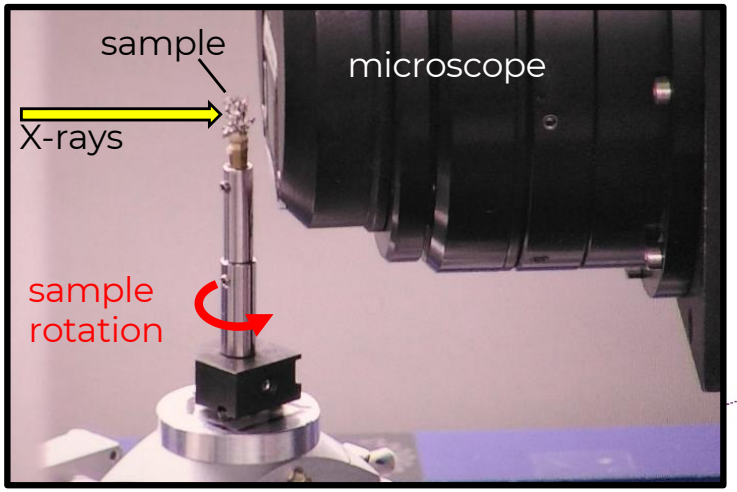


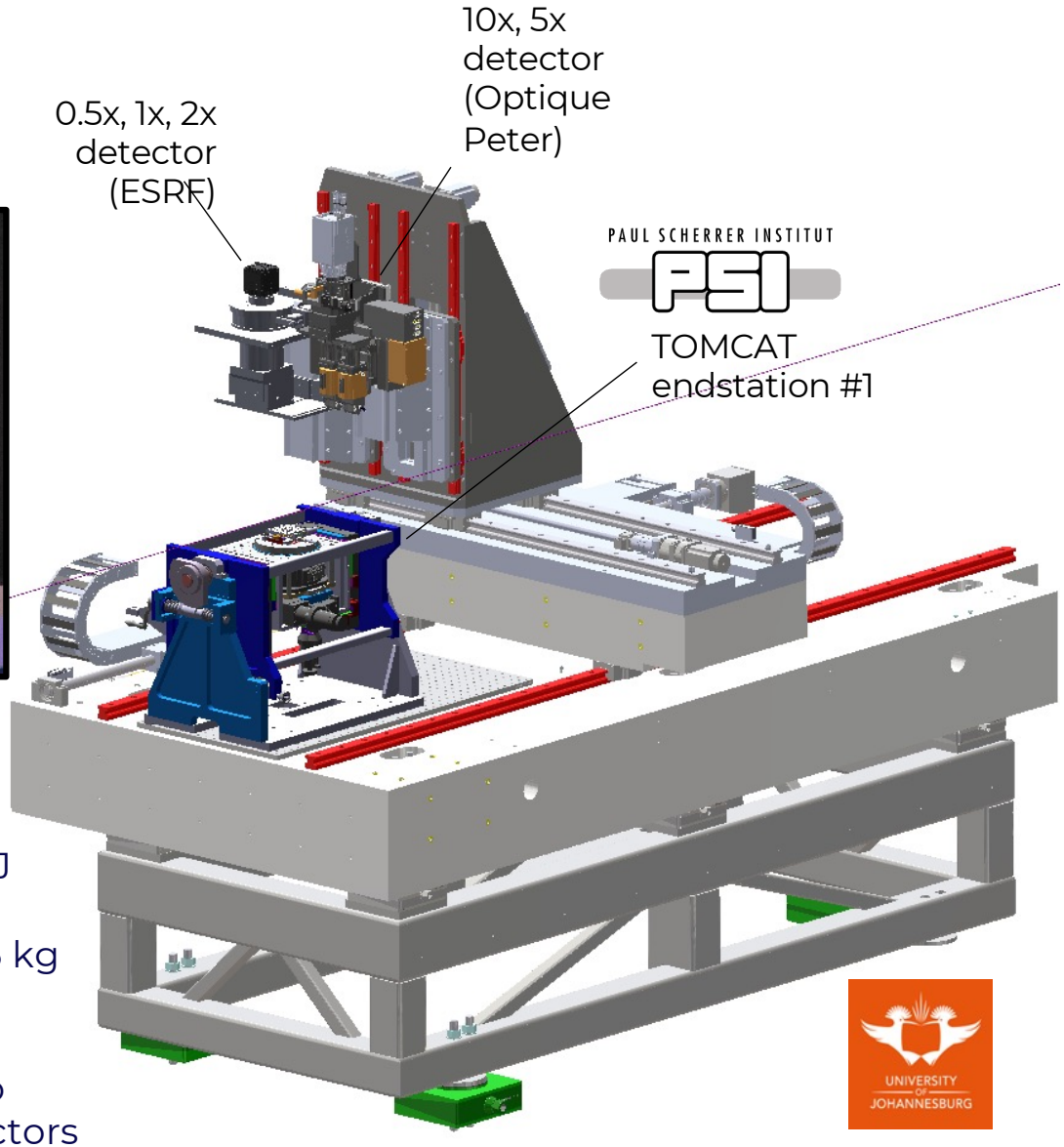
December 2022 / January 2023
Double Multilayer Monochromator (DMM) installed and under vacuum

4. ID10 - BEATS cont.

BEATS experimental station

Sample and detectors stage





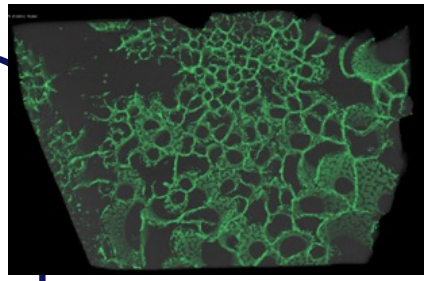
- Synergy with PSI TOMCAT, ESRF BM5 and UJ Johannesburg
- Micos air-bearing rotator for samples up to 5 kg
- Support for 2 detectors

- 1st eigenmode of granite stage maximized to minimize the effect of vibration on the detectors

4. ID10 - BEATS cont.

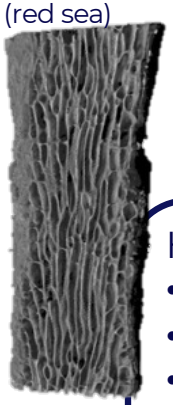
SESAME

Archaeology and Cultural Heritage
- Archaeological Materials
- Human bio-archaeology
- Plant remains
- Animal remains and artifacts

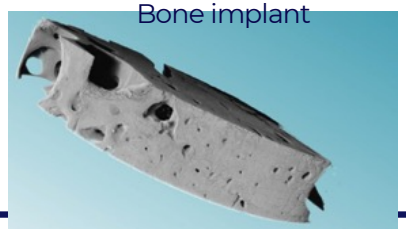


Roman glass

Mineralized algae (red sea)

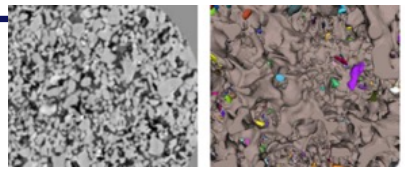


Bone implant



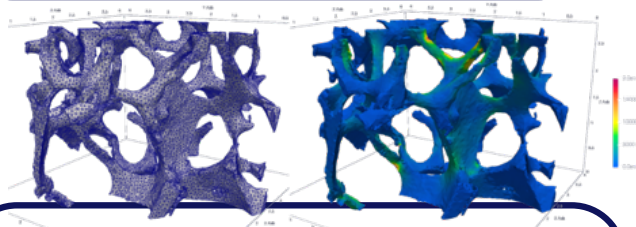
Health, Biology and Food
- Musculoskeletal research
- Bone and dental implants
- Soft tissue imaging
- Animal and plant characterization
- Food science

Agriculture and Environment
- Simulation of rock properties
- Soil characterization
- Sustainable agriculture



Sandstone core

Synchrotron Tomography @ BEATS



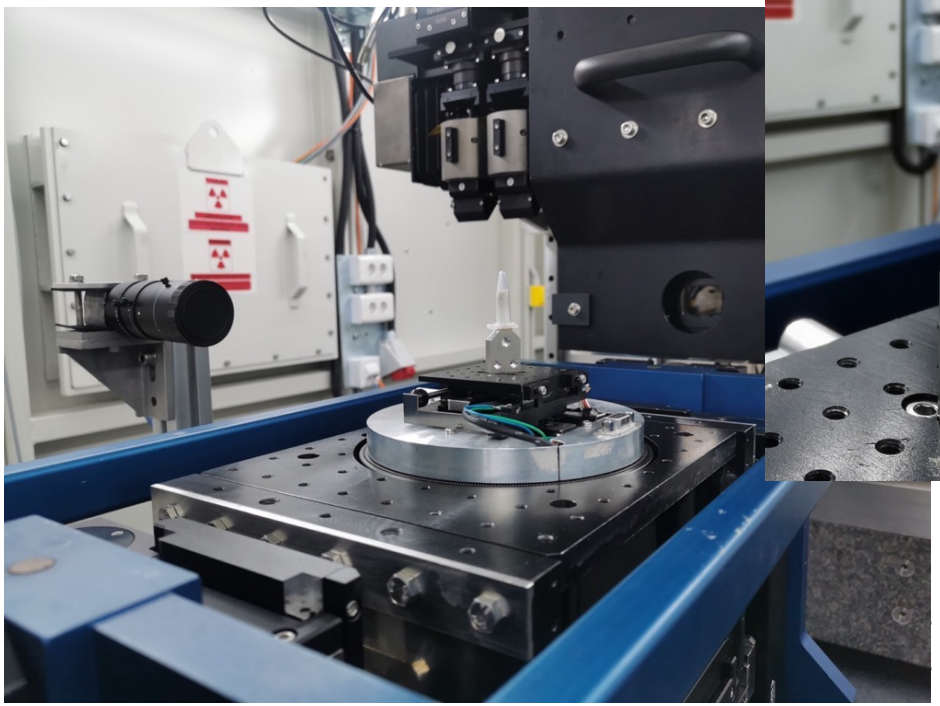
Materials Science and Engineering
- Light materials and alloys
- Materials under mechanical stress
- Energy materials research

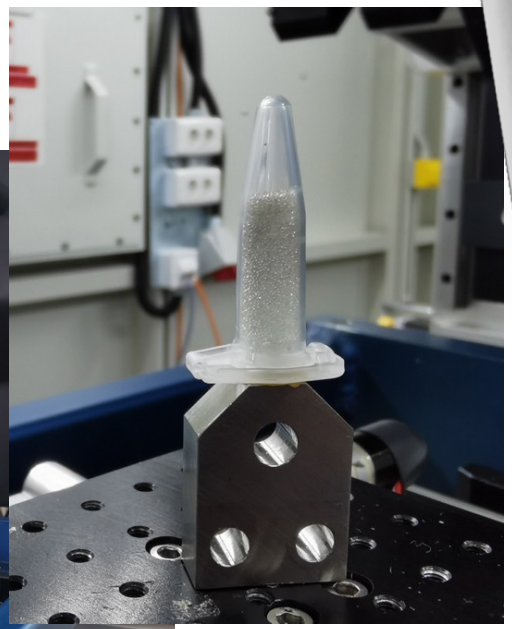
Services to Industry and Private Sector

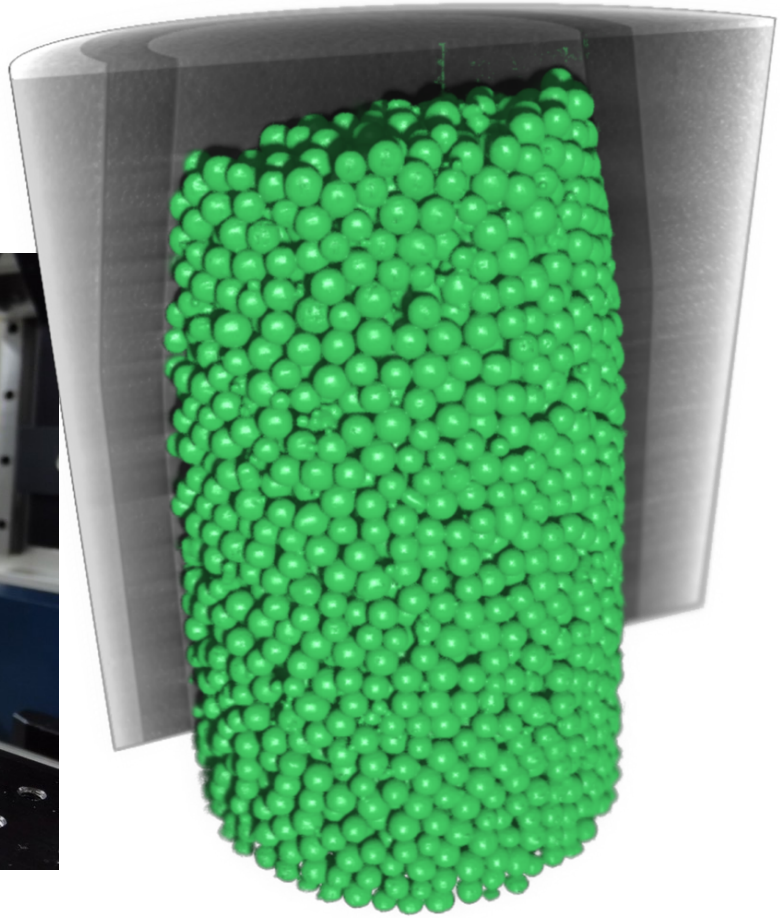
BEATS scientific case

4. ID10 - BEATS cont.

11 May 2023 – First BEATS scan

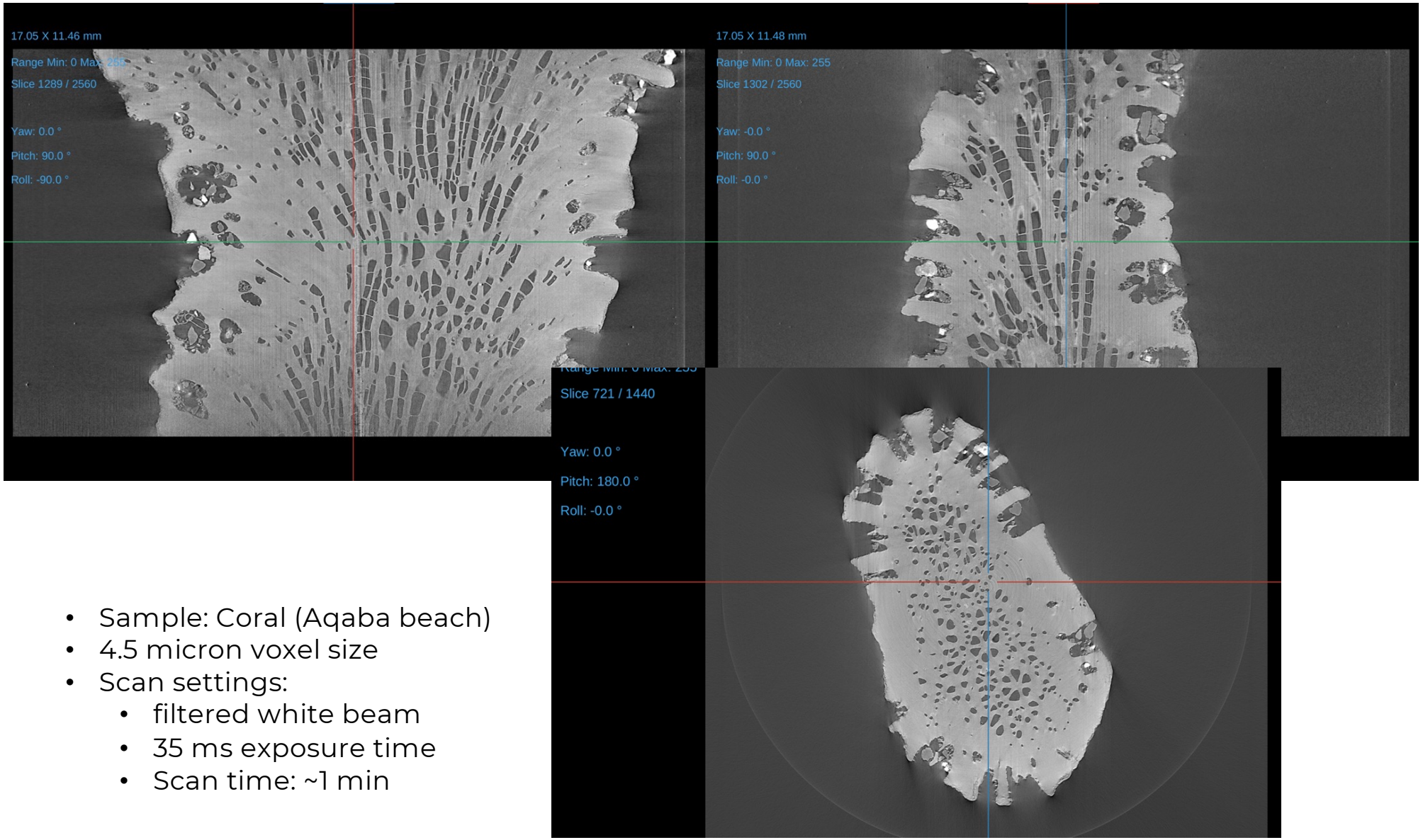






- Glass spheres (diameter ~300 micron)
  4.5 micron voxel size
- Phase contrast image obtained from 1000 radiographs; 180 degrees rotation
- Total scan time: 12 s

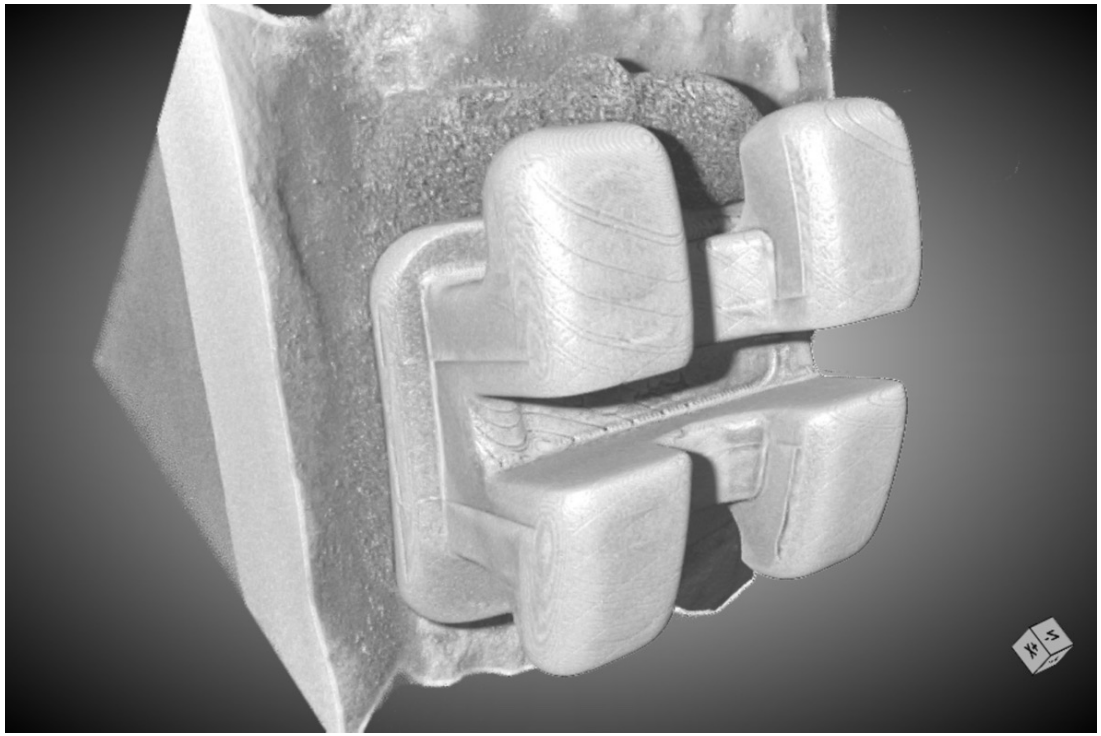
4. ID10 - BEATS cont.

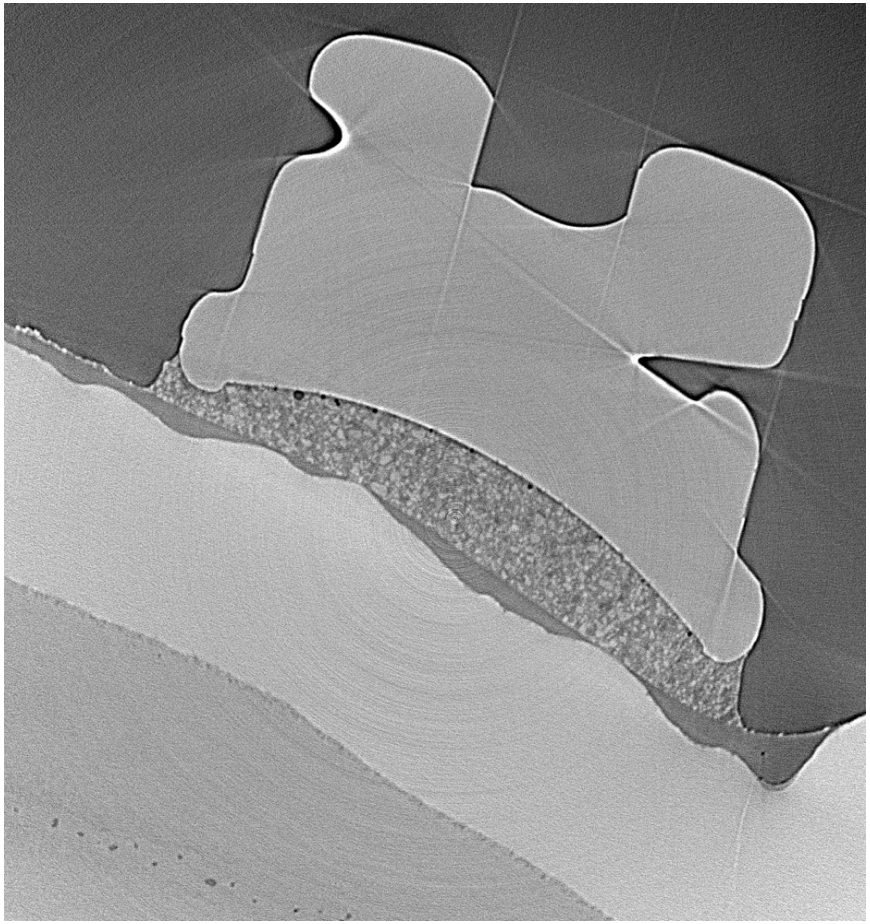


- Sample: Coral (Aqaba beach)
- 4.5 micron voxel size
- Scan settings:
  - filtered white beam
  - 35 ms exposure time
  - Scan time: ~1 min

4. ID10 - BEATS cont.

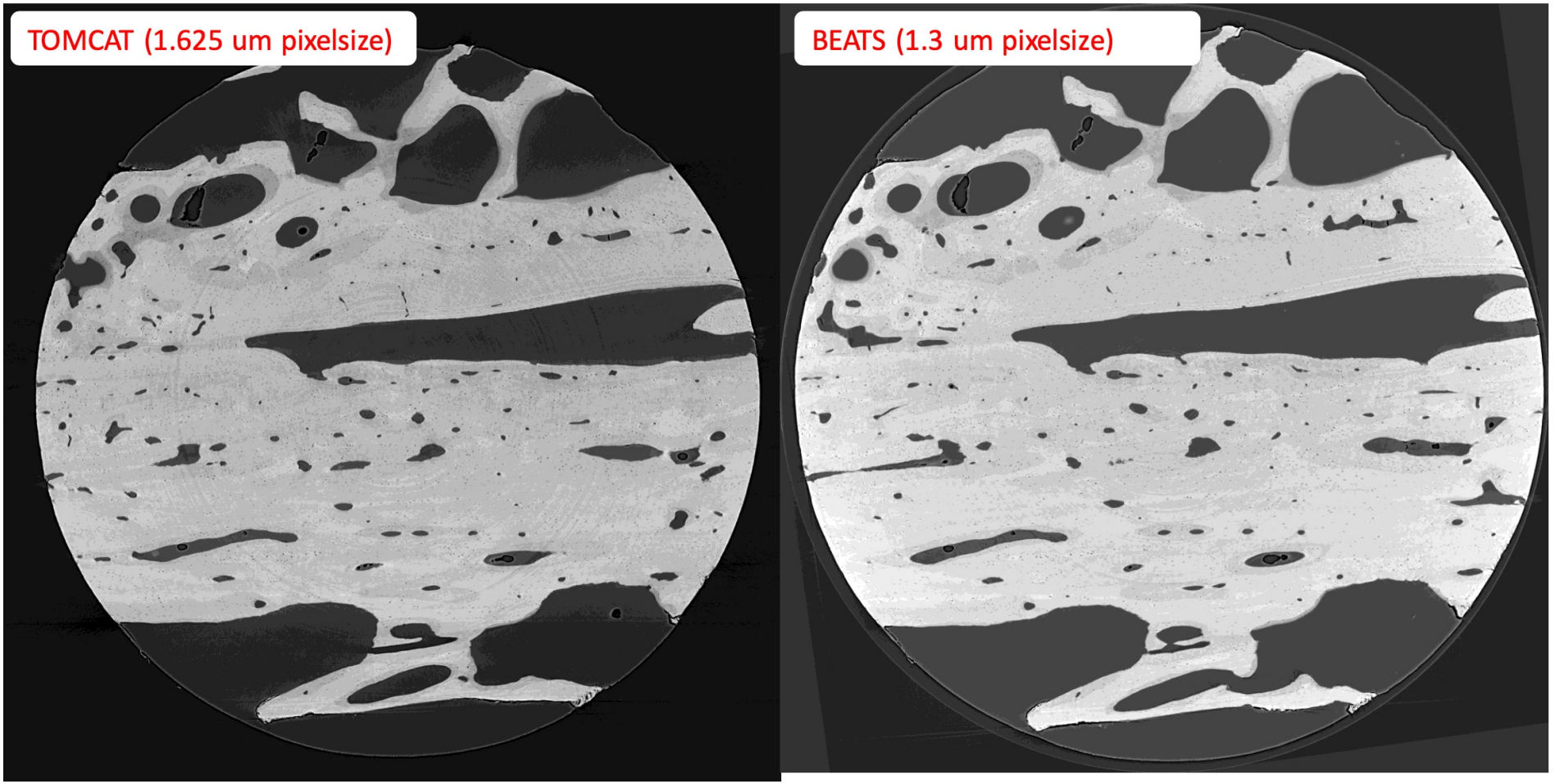
- Dental bracket
- Filtered white beam
- 6.5 micron voxel size
- Exp. time: 8 ms
- Scan time: 40 sec
- Courtesy P. Koch, P. Zaslansky





4. ID10 - BEATS cont.

- Sample: human bone (implant);



BEATS: Comparison BEATS – PSI TOMCAT

4. ID10 - BEATS cont.

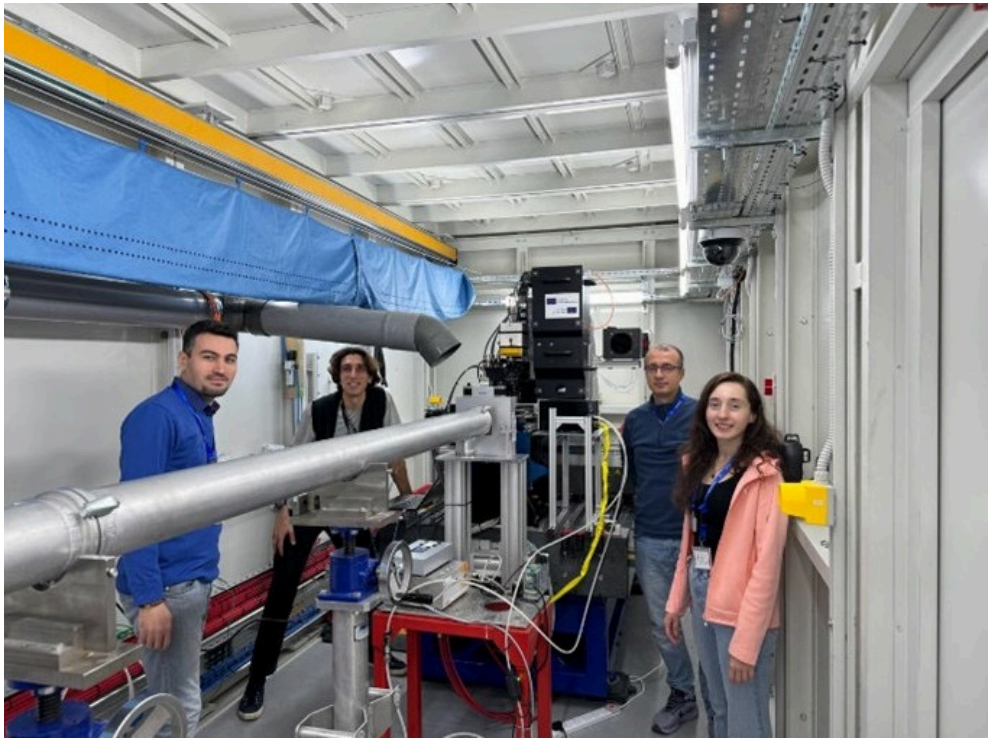
4. ID10 - BEATS cont.

11 February 2023 – First users at BEATS

Bilkent University UNAM (National Nanotechnology Research Center), Ankara, Türkiye

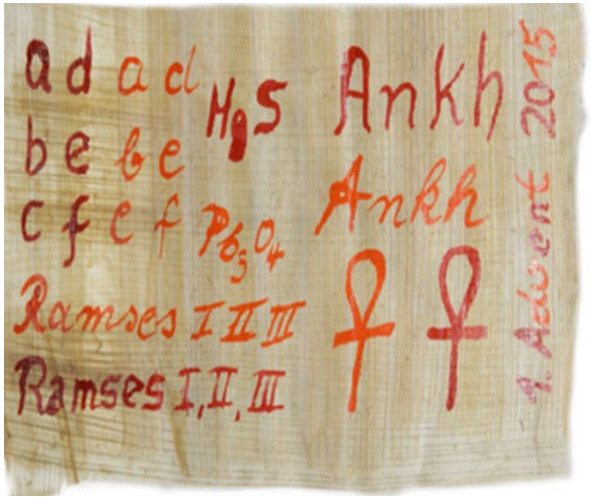
- Dr. Ali Karatutlu (Principal Investigator)
- Dr. Bülend Ortaç
- Ms. Zehra Gizem Mutlay (PhD Student)

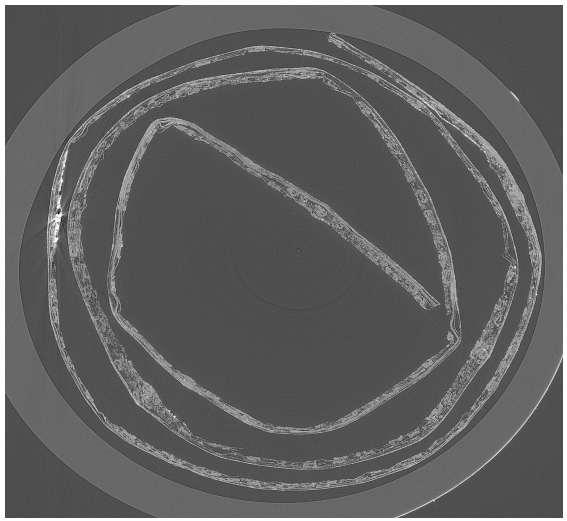
Nanotechnology, fiber laser research

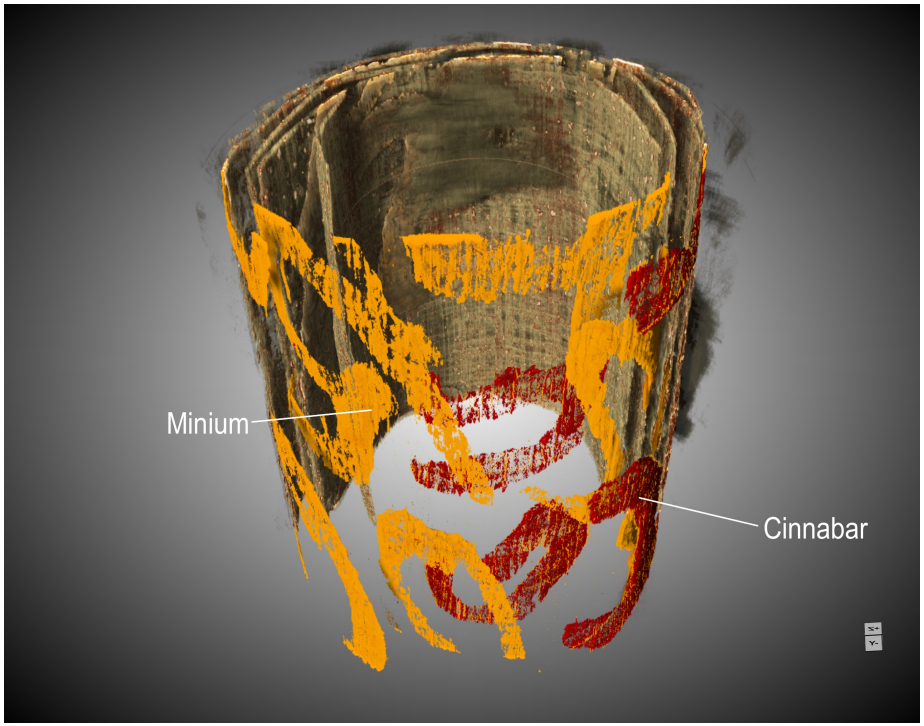


The measurements lasted three days, resulting in almost 500 Gigabytes of data, containing 3D pictures of different samples with a voxel size of 650 nanometers. These images provide insight into the manufacturing and applications of polarization-maintaining fiber glass products.

4. ID10 - BEATS cont.







Absorption edge sensitive tomography
Pb_3O_4 and HgS

Proposal # 20235045 (Ägyptisches Museum und Papyrussammlung Berlin, HZB, FU) Heinz-Eberhard Mahnke et al., Gianluca Iori, Philipp Hans

5. ID11L - HESEB
(Helmholtz-SESAME Beamline)

On October 25th 2018, SESAME hosted a delegation from the Helmholtz Association of German Research Centers consisting of 43 persons. It was headed by Professor Otmar Wiestler, President of the Association.

During the visit, Otmar Wiestler informed SESAME that five research centers of the Helmholtz Association will be taking part in construction of a soft X-ray beamline for SESAME under the leadership of DESY (Deutsches Elektronen-Synchrotron). This is one of SESAME's Phase I beamlines.

SESAME

5. ID11L - HESEB cont.

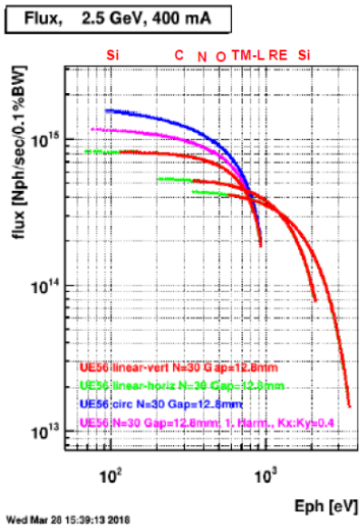
The five research centers are:

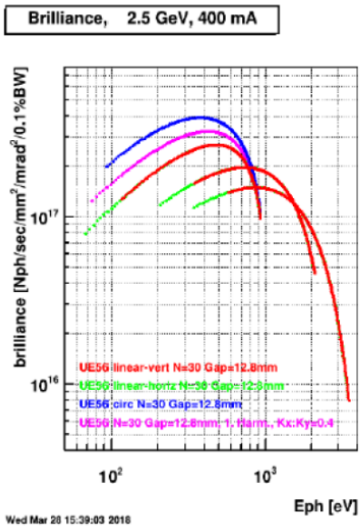
- **DESY (Deutsches Elektronen-Synchrotron)**
- **FZJ (Forschungszentrum Jülich)**
- **HZB (Helmholtz-Zentrum Berlin)**
- **HZDR (Helmholtz-Zentrum Dresden-Rossendorf)**
- **KIT (Karlsruher Institut für Technologie)**

A complete undulator beamline with monochromator and refocusing optics and a small chamber to conduct absorption and fluorescence yield experiments.

The capital value of this beamline is €3.5 million

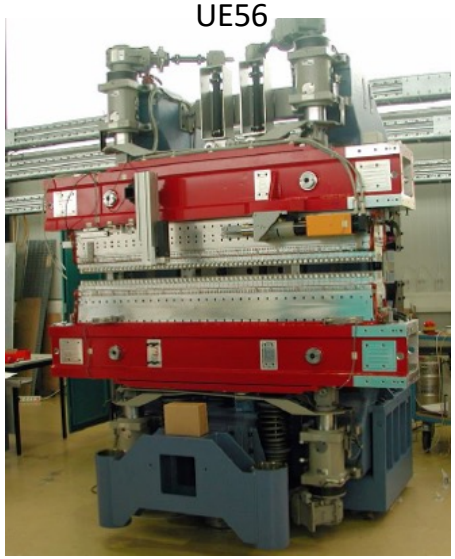
5. ID11L - HESEB cont.

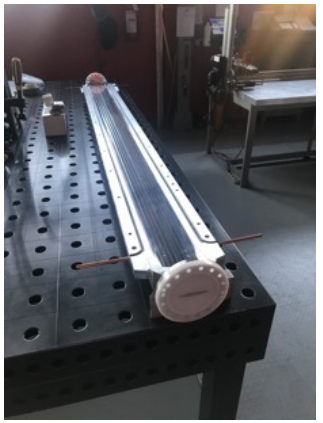




Meseck, Bahrdt, Viefhaus, HZB Berlin

UE56





ID-Chamber produced
at SAES / IT now at SESAME

Covers the core edges:

- Si L-edge—semiconductors
- C-, N-, O- Kedge - Organics catalysis
- TM-L-edges magnetics
- RE 3d edges magnetics
- Al- K-edge, Si-K-edge

In a nutshell:

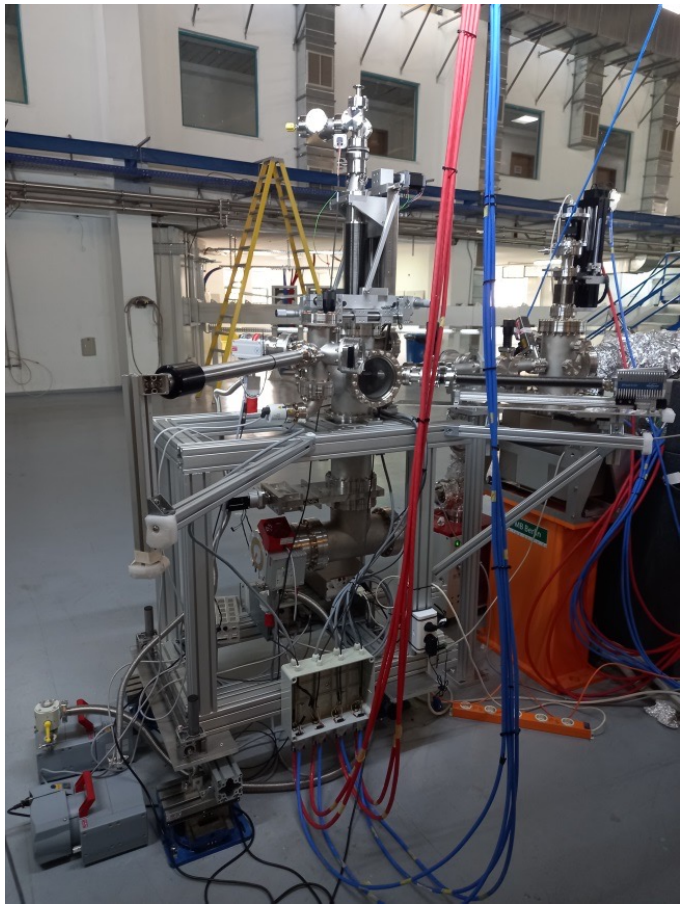
- ID chamber, tapered chambers
- Refurbishment of UE56 at HZB
- Training visit of 4 SESAME staff to HZB in August 2021
- Installed at SESAME in April 2022

Undulator UE56 (APPLE II) with variable polarization

5. ID11L - HESEB cont.

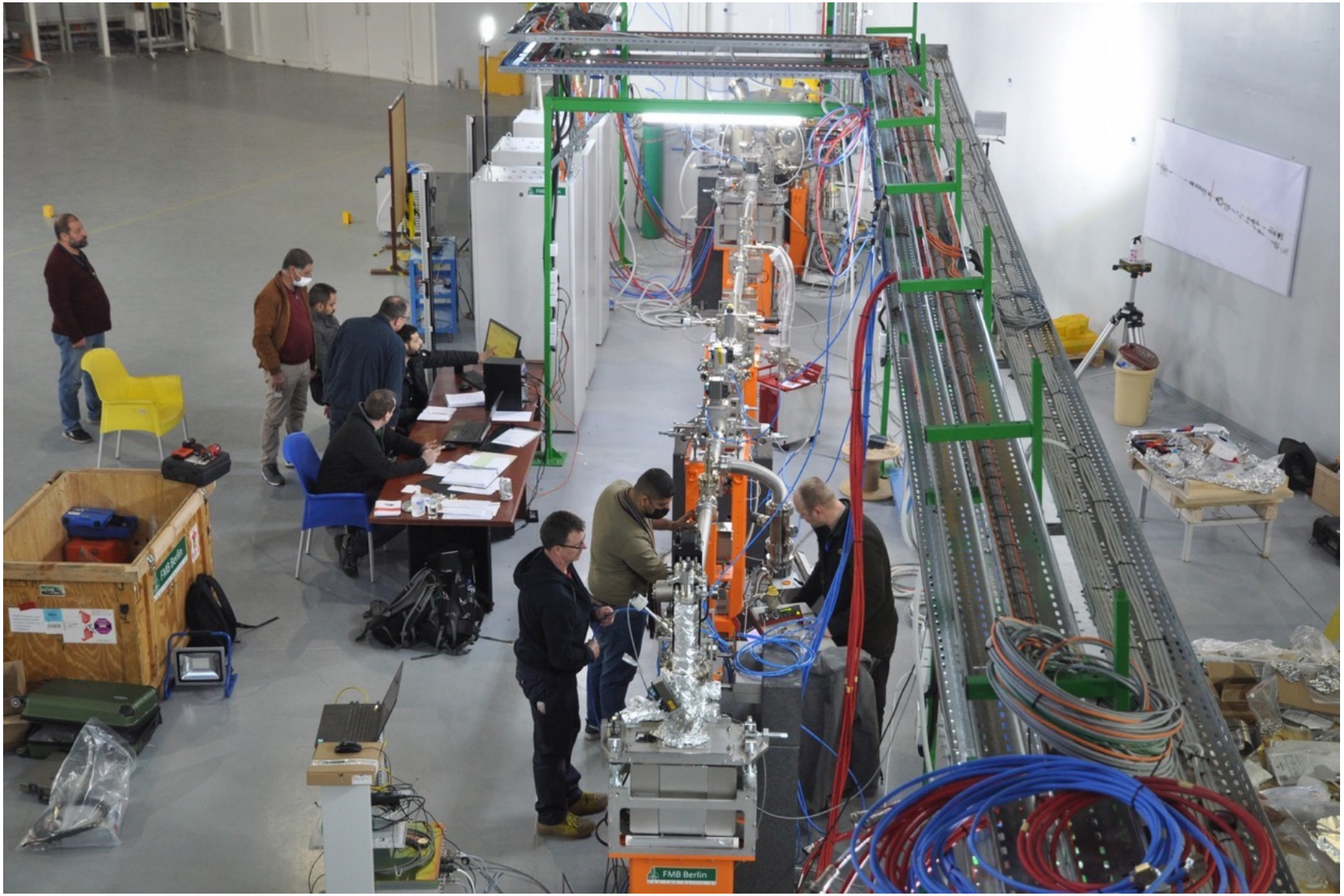
January 2022: Installation of the Beamline and the Front End

5. ID11 - HESEB cont.



January 2022: Final Stage of Installation

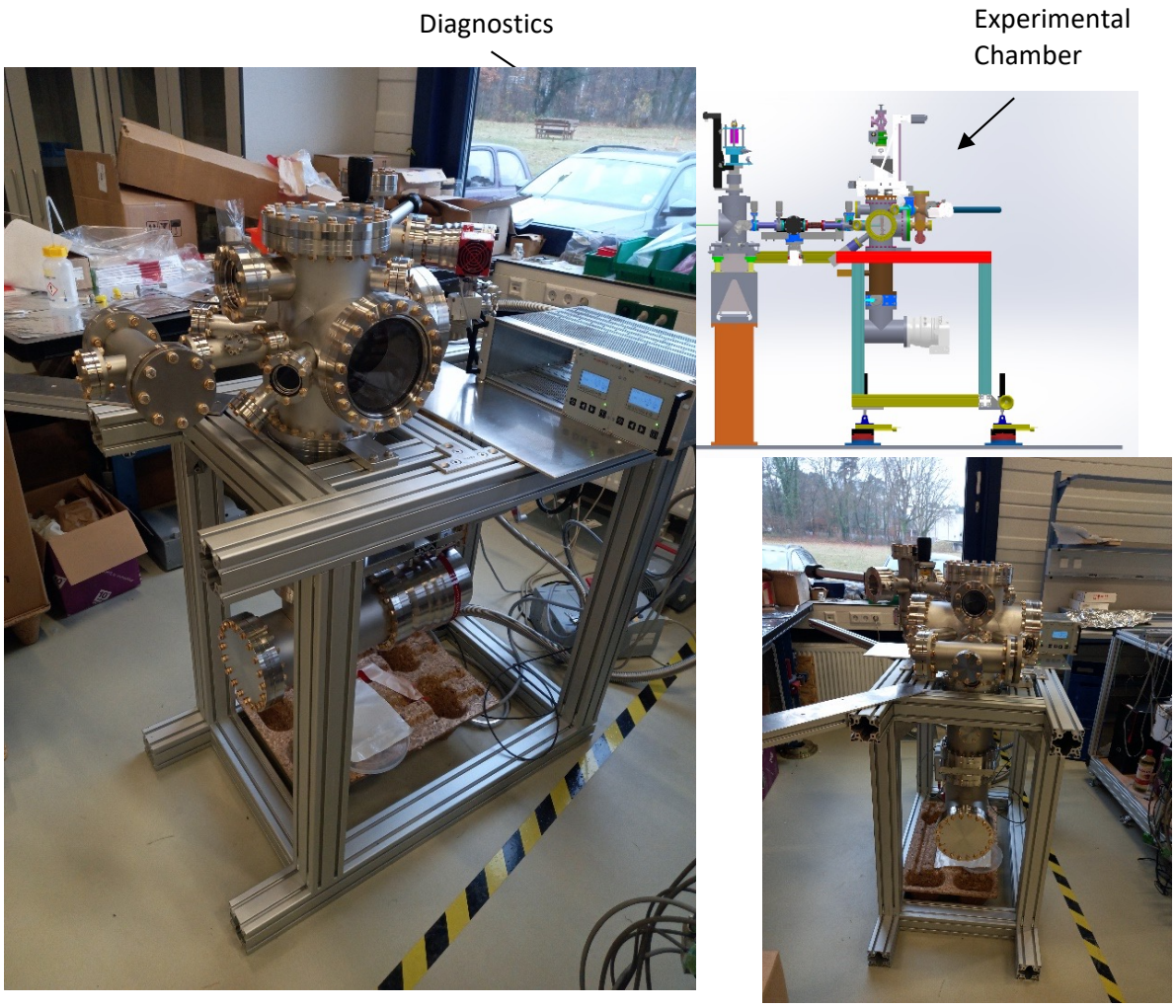
5. ID11 - HESEB cont.



January 2022: Beamline Leak Test + Controls Tuning

5. ID11 - HESEB cont.

- Design led by W. Eberhardt / M. Genisel
- Absorption, CMXD and fluorescence yield studies
- Manipulator arm with sample transfer, heating/cooling (FZ Jülich)
- Assembly for focussing capillary (TU-Berlin) has been designed and built
- 2D-mapping of surfaces with 20 μm spatial resolution UHV---up to pressures of 1 atmosphere (He)



HESEB Experimental Chamber

5. ID11 - HESEB cont.

June 8, 2022: First Beam in HESEB Beamline

5. ID11 - HESEB cont.

- H.E. Prof. Wajih Owais, Minister of Higher Education and Scientific Research of Jordan

- Professor Otmar Wiestler, President of the Helmholtz Association of German Research Centres

- H.E. Mr. Bernhard Kampmann, Ambassador of Germany to Jordan

June 12, 2022: Official Inauguration

5. ID11 - HESEB cont.

HESEB User community building

- In the original proposal, we prepared/planned various teaming/twinning actions for 2020, incl. a major workshop in March 2020 in Turkey
- However, had to cancel all this due to SARS-CoV2
- In 2020/2021 several HESEB online seminars/ workshops were organized
- We also make use of synergies with BEATS, i.e. close coordination, joint events, such as discussions on a joint workshop on archaeology / cultural heritage and on a dedicated event to target Palestine

وزارة التعليم العالي والبحث العلمي

SESAME-PGSB Workshop

⇨ Online-Workshop on 16th November 2021 — 10^{00} to 13^{00} (EET) resp. 9^{00} to 12^{00} (CET)

5. ID11 - HESEB cont.

12 February 2023 – First users at HESEB

A collaboration among Jordanian Universities:

- Dr. Yusuf Selim Ocak (Institute of Nanotechnology, Jordan University of Science and Technology, Principal Investigator)
- Dr. Borhan Aldeen Albiss (Institute of Nanotechnology, Jordan University of Science and Technology)
- Dr. Bashar Aljawrneh (Al-Zaytoonah University)

Use the HESEB beamline to study the electronic structure of samples and investigate the effects of dopants on semiconductor thin films

Data collected during three days for 9 samples at the absorption edges of O, Co, Ni, and Cu

5. ID11 - HESEB cont.

Characterisation and Conservation of Paintings on Walls and Sculpture from Nabataean Petra

B. Kanngiesser and M. Naes

BLiX Berlin Laboratory for innovative X-ray Technologies

- Analytical Investigations of wall paintings and sculpture: in-situ and ex-situ; organic and inorganic, non-invasive & ND
- Development of experimental conservation material for gold: synthesis, characterisation, validation, evaluation

New Beamline Initiatives
6. TXPES

TXPES

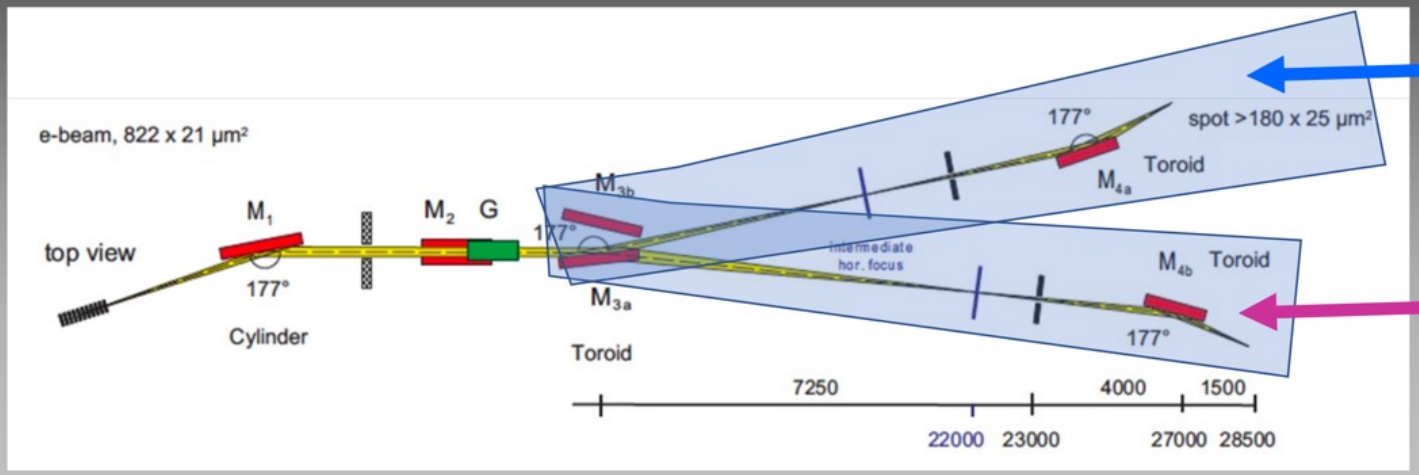
TENMAK
TÜRKİYE ENERJİ, NÜKLEER VE MADEN ARAŞTIRMA KURUMU

İhsan Doğramacı Bilkent Üniversitesi

TARLA
Turkish Accelerator and Radiation Laboratory in Ankara

KOÇ UNIVERSITY

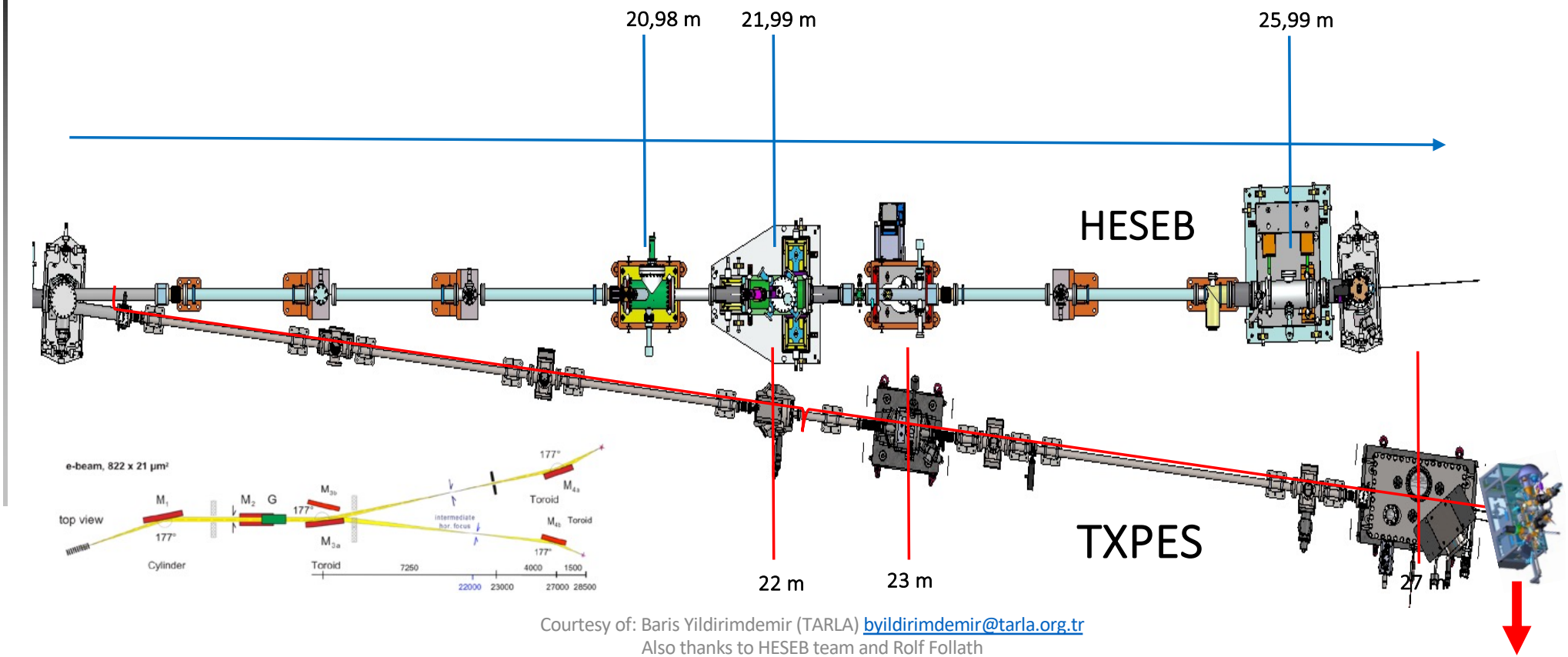
Complementarity of TXPES & HESEB Beamlines



HESEB Beamline

TXPES Beamline

6. TXPES X-ray Optics Design



Courtesy of: Baris Yildirimdemir (TARLA) byildirimdemir@tarla.org.tr

Also thanks to HESEB team and Rolf Follath

TXPES

Emrah Ozensoy, Bilkent University
Chemistry Department, Ankara, Turkey

6. TXPES End Station Components: Chamber Modules

Analysis Chamber

- PHOIBOS 150 CMOS XPS/LEIS Analyzer
- XR 50: Dual Anode X-ray Source
- UVS 10: UV Source (for UPS)
- Electron Flood Gun
- Rastering Ion Gun for LEIS/Depth Profiling
- 4-Axis Manipulator with LN_2 Cooling & Resistive Heating to 1200 K

Preparation Chamber

- Ion Gun for Sputtering
- RF-Plasma Source
- Hydrogen Cracker
- LEED
- QMS
- Metal/Metal Oxide Evaporators
- Gas Dosers
- 4-Axis Manipulator with LN_2 Cooling & Resistive Heating to 1200 K

High-Pressure Chamber

- HPC-20 High Pressure Cell for Reactive Sample Pretreatment

Load Lock Chamber

- Sample Loading/Removal

TXPES

TENMAK

TARLA

KOÇ UNIVERSITY

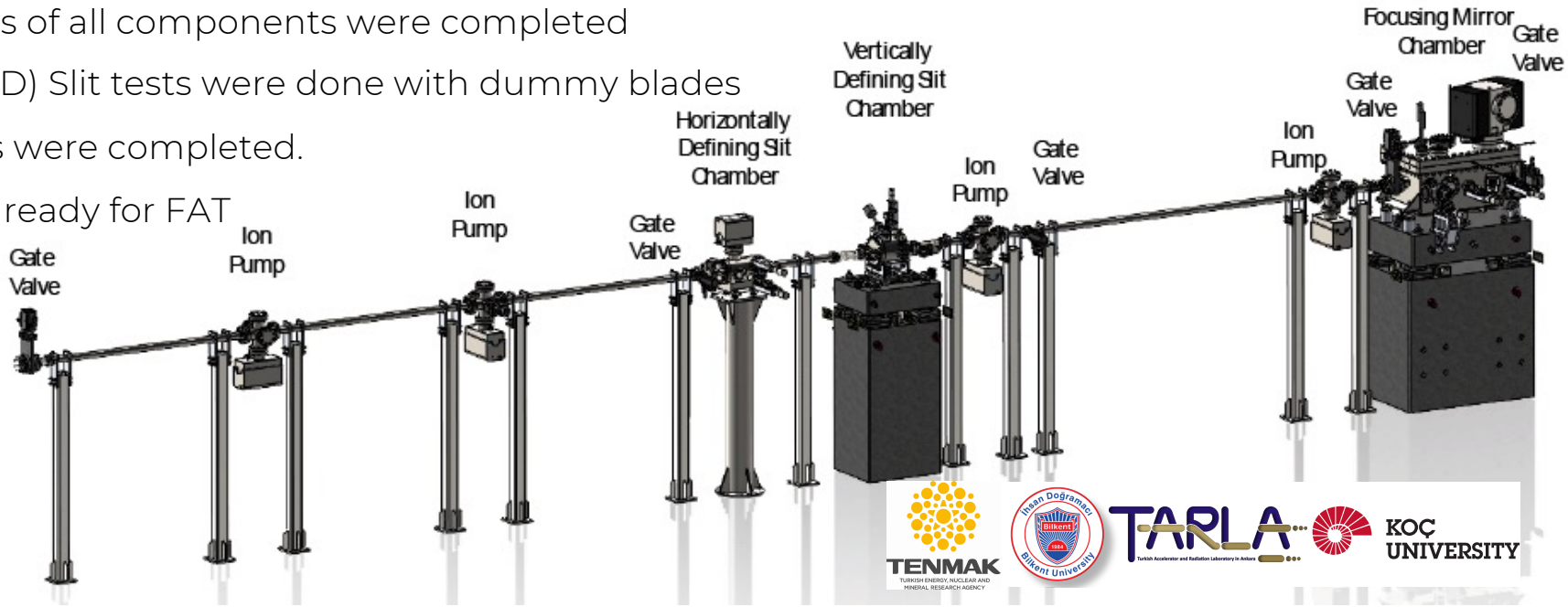
Emrah Ozensoy, Bilkent University
Chemistry Department, Ankara, Turkey

ID11 right – TXPES General Status of TXPES Beam Transport

- Toroidal optics delivered, only missing component: Energy (VD) Slit blades

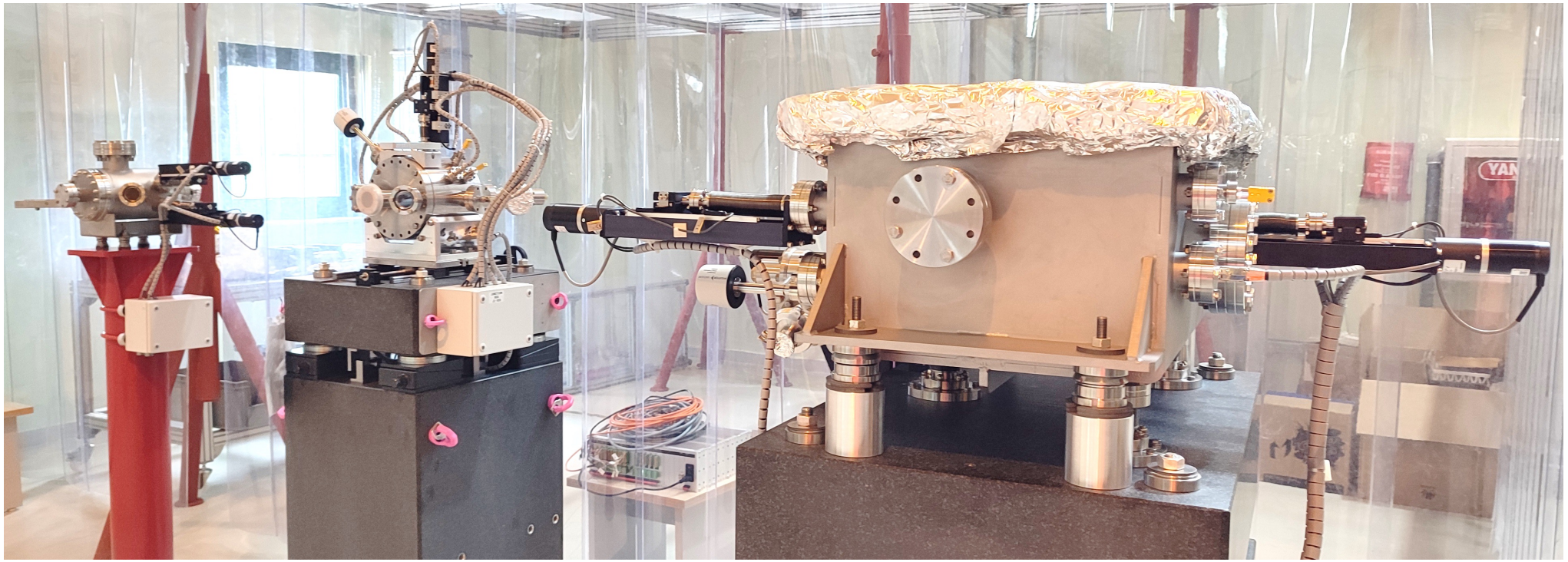
Shipping expected February 2025.

- Initial tests of all components were completed
- Energy (VD) Slit tests were done with dummy blades
- Leak tests were completed.
- System is ready for FAT



SESAME

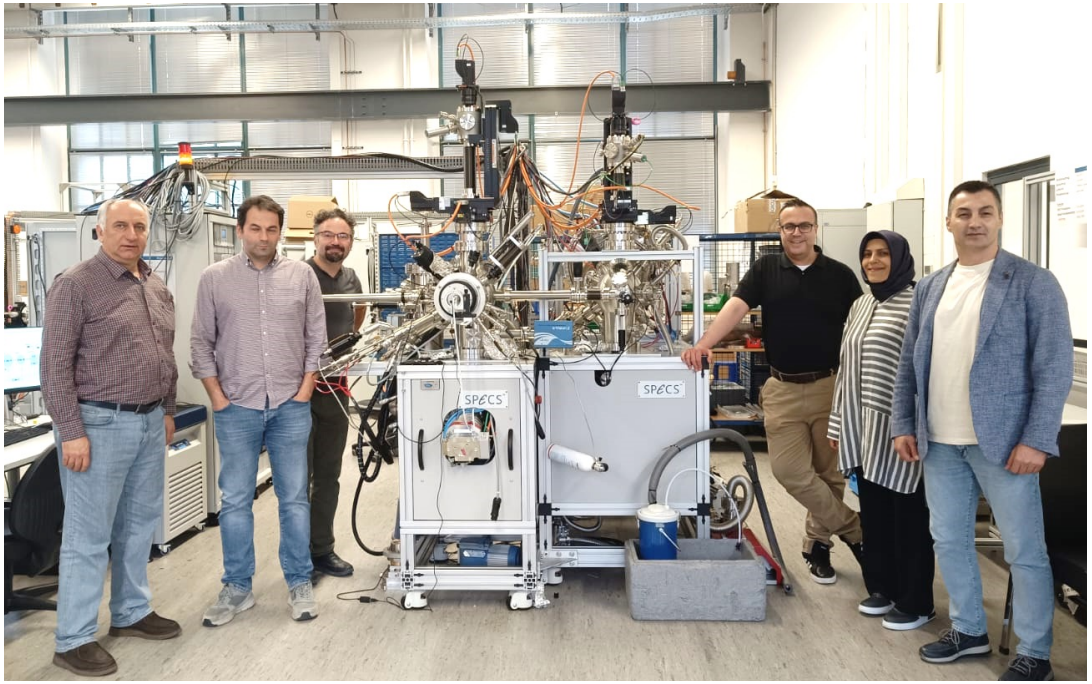
ID11 right – TXPES General Status of TXPES Beam Transport



byildirimdemir@tarla.org.tr

TXPES

ID11 right – TXPES Manufacturing & Installation of End Station



Factory Acceptance Tests (FAT)

- FAT of the XPS end station were completed between May 28-June 1, 2024 at the SPECS headquarters in Berlin, Germany.
- FAT tests were carried out along with:
- Assoc. Prof. Sarp Kaya (Koc Univ., Istanbul)
- Dr. Zeynep Ozturk (SESAME)
- Dr. Mustafa Fatih Genisel (SESAME)
- Dr. Omer Kantoglu (TENMAK)
- Dr. Gencay Gundogdu (SESAME)
- After completion of FAT, end station was disassembled for shipment to SESAME.

SESAME

ID11 right – TXPES Manufacturing & Installation of End Station

SPECS & TENMAK staff came to SESAME for installation on September 23, 2024

TENMAK TURKISH ENERGY, NUCLEAR AND MINERAL RESEARCH AGENCY

İnsan Doğramacı Bilkent University

TARLA Turkish Accelerator and Radiation Laboratory in Ankara

KOÇ UNIVERSITY

SESAME

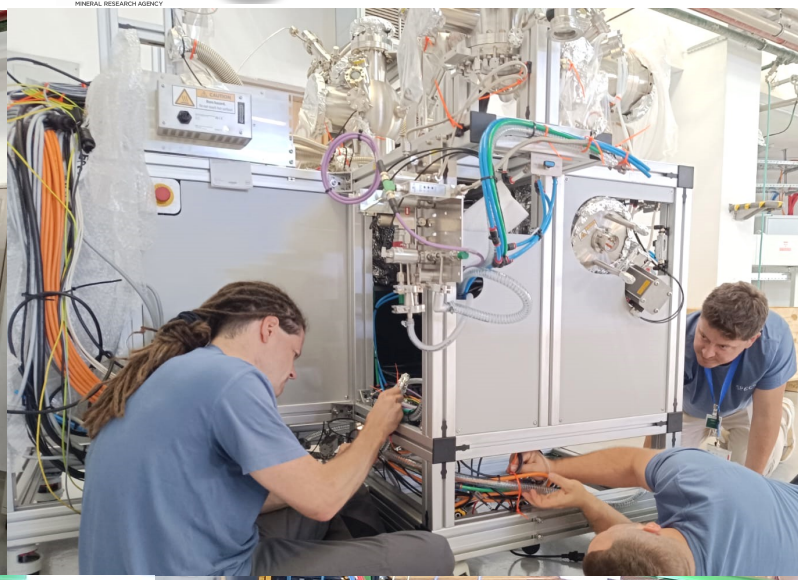
SPECS & TENMAK staff came to SESAME for installation in September, 2024

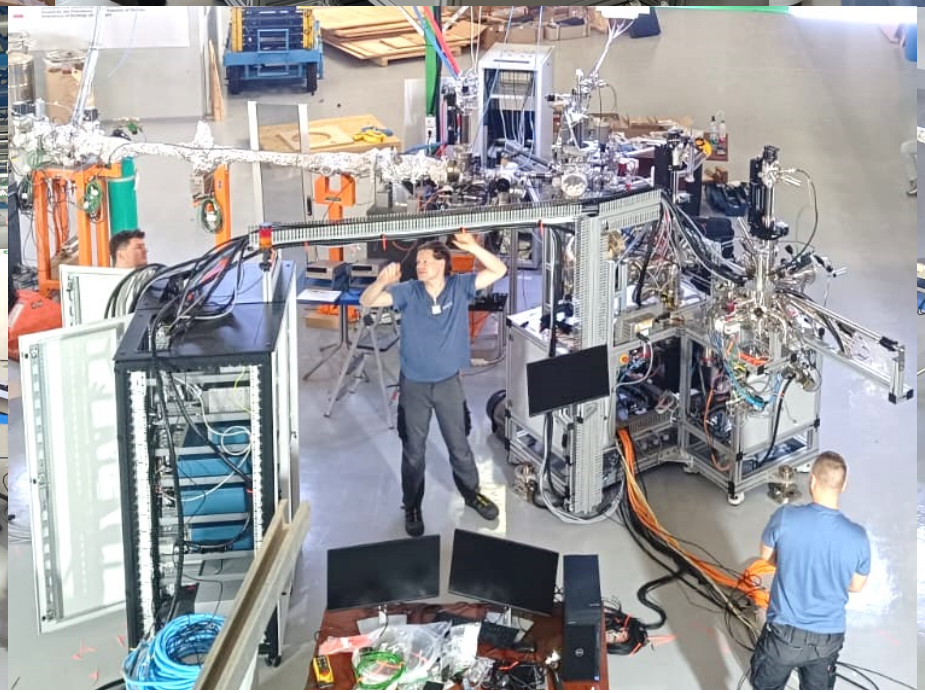
TENMAK
TURKISH ENERGY, NUCLEAR AND MINERAL RESEARCH AGENCY

İhsan Doğramacı Bilkent University

TARLA
Turkish Accelerator and Radiation Laboratory in Ankara

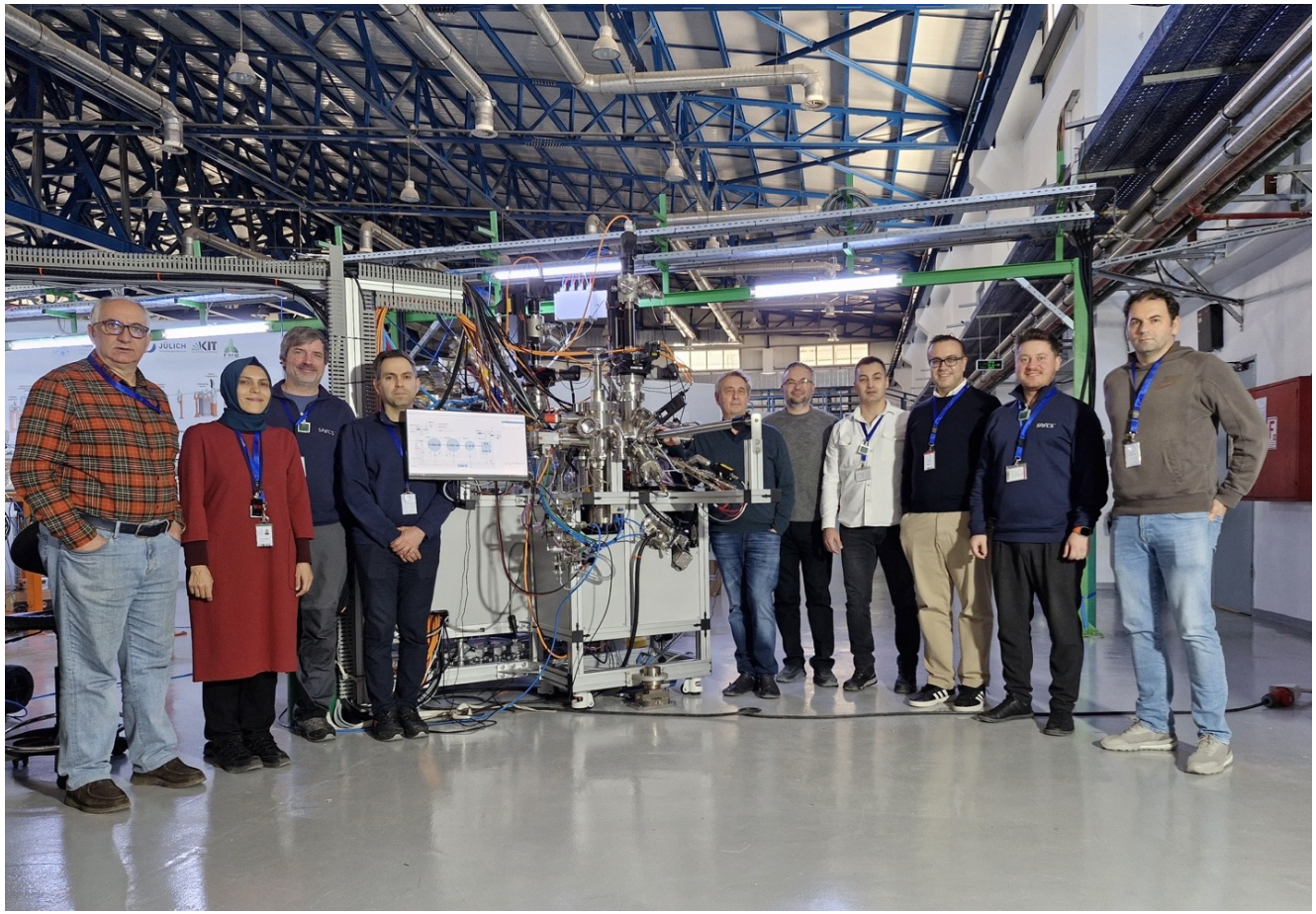
KOÇ UNIVERSITY





SESAME

ID11 right – TXPES End Station Site Acceptance Tests, December 2024



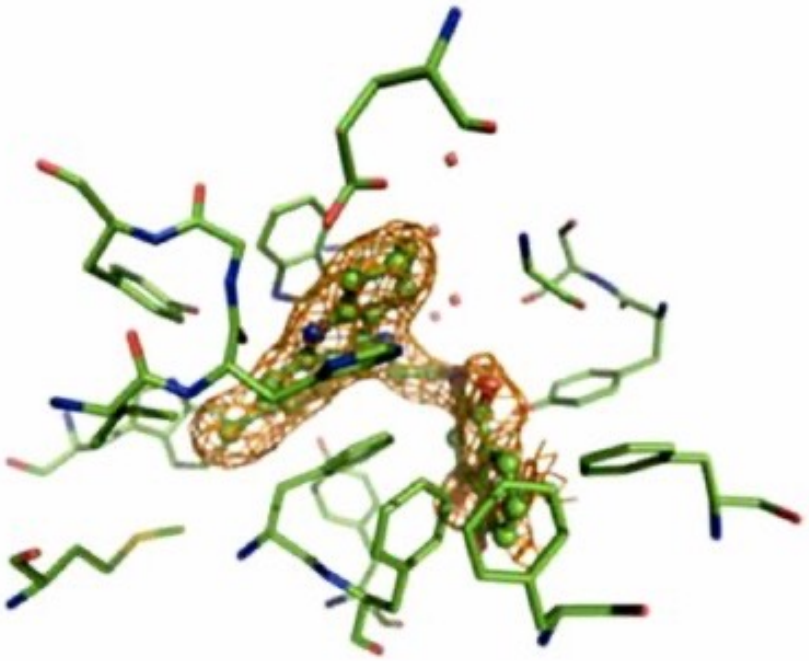
SPECS technical staff pose near the newly installed experimental chamber together with representatives of the TXPES project and SESAME staff.

TENMAK TURKISH ENERGY, NUCLEAR AND MINERAL RESEARCH AGENCY
İhsan Doğramacı Bilkent University
TARLA Turkish Accelerator and Radiation Laboratory in Ankara
KOÇ UNIVERSITY

New Beamline Initiatives
7. Macromolecular Crystallography

- **The first macromolecular crystallography beamline in the Middle East to facilitate experiments in the medical and pharmaceutical fields in the region as well as in Asia-Pacific.**

- **Currently a proposal has been submitted to construct the beamline through IAEA/SESAME intergovernmental project based on cost sharing approach.**



Guest-House Inauguration on December 4, 2019

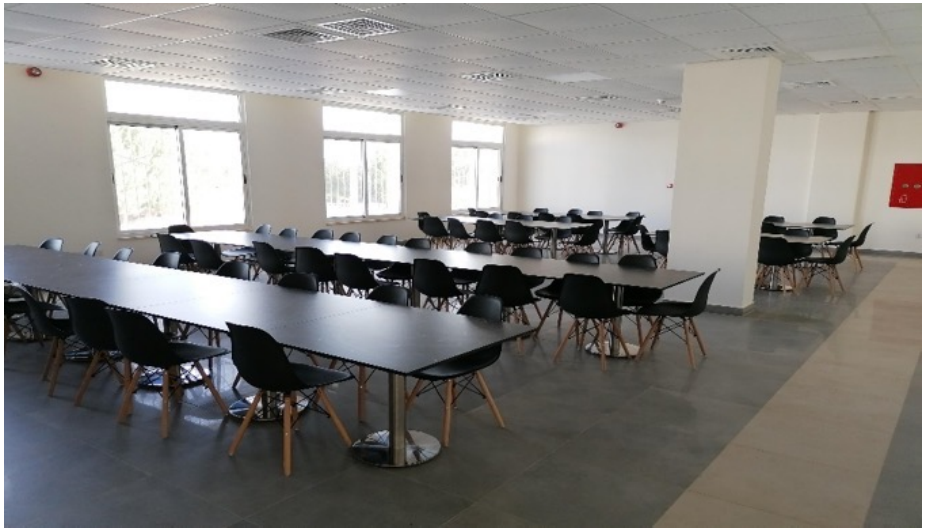
SESAME Guest-House was funded by the Italian Ministry of Education, Universities and Research through INFN (total of 1.75 M Euros). The Guest-House includes a canteen, large meeting room and 48 Guestrooms.

Guest-House Rooms and Facilities

Bedroom

Bedroom

Kitchen

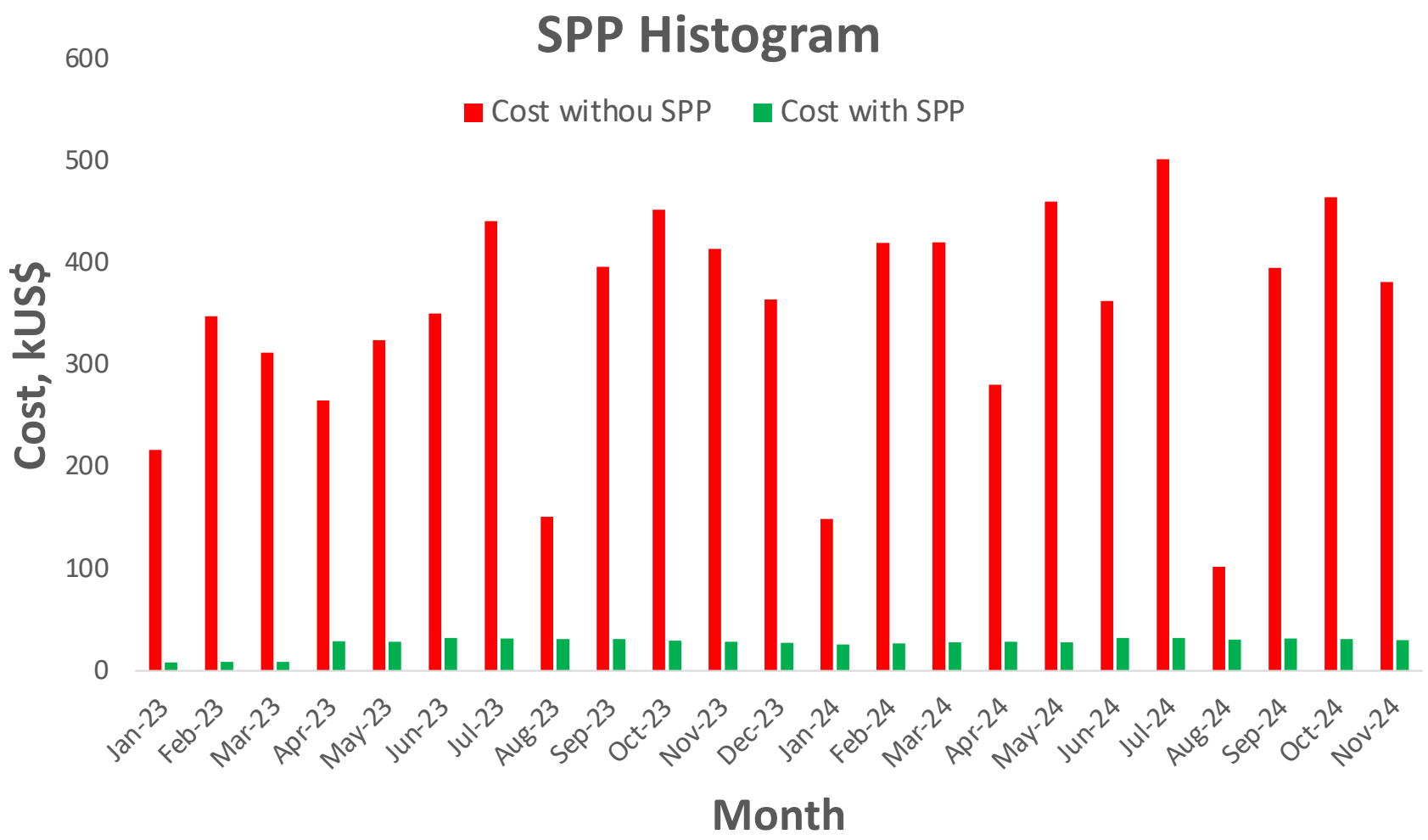


Dining Room

Solar Power Plant: Current Status

SESAME

Comparison Chart for 2023-2024

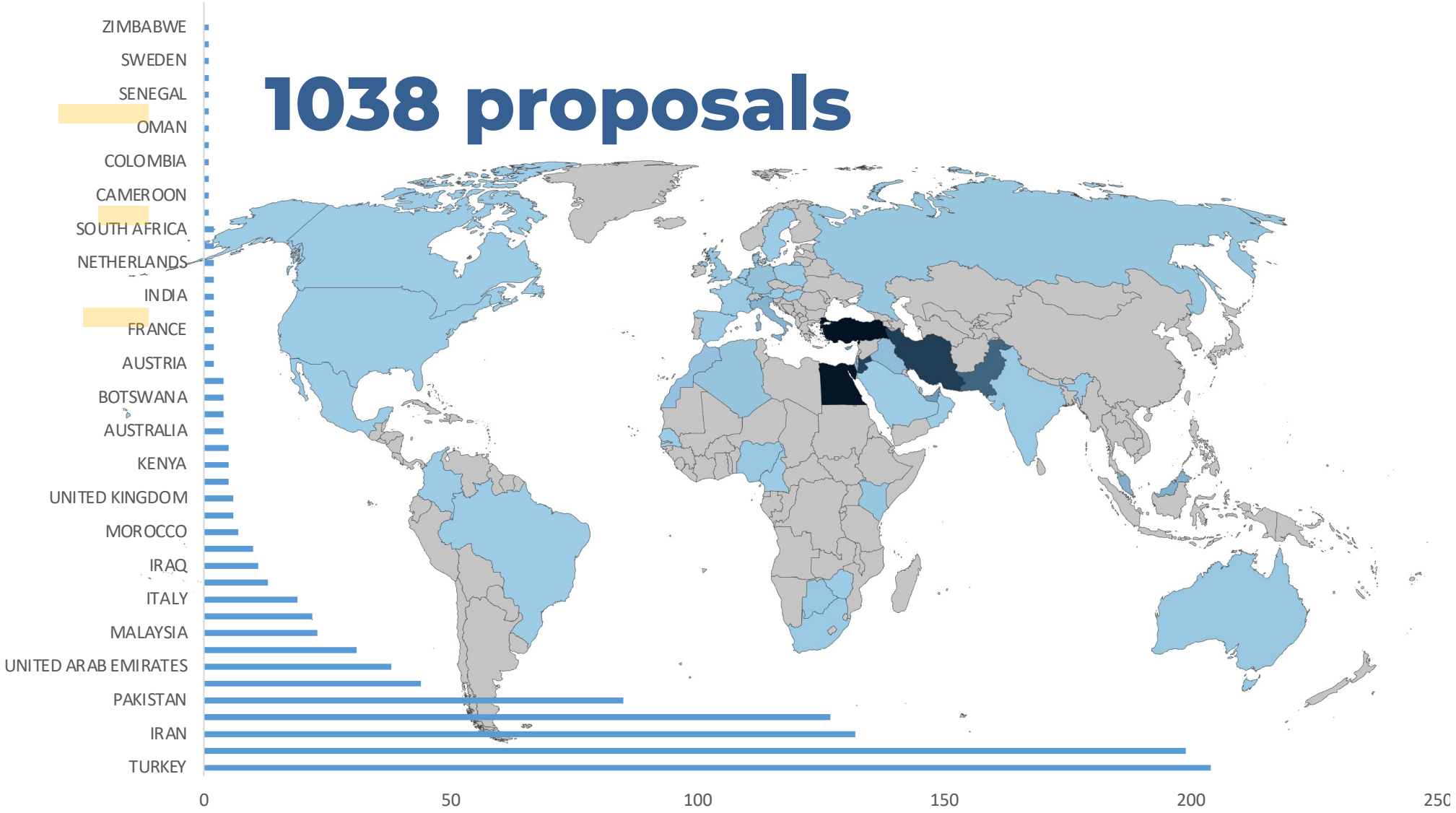


SESAME

SPP Data 2019-2024

Year	Production, kWh	Consumption Power, kw	Cost, US$		Savings, US$	Saved CO_2, Ton
			With SPP	Without SPP		
2019	9,541,970	7,127,380	112,041	2,677,801	2,565,760	6,233
2020	9,318,793	5,676,520	108,182	2,132,704	2,024,522	6,087
2021	11,529,373	9,726,160	137,238	3,654,179	3,516,941	7,531
2022	10,812,209	8,318,220	127,778	3,125,207	2,997,429	7,062
2023	10,747,999	10,743,270	295,274	4,036,313	3,741,039	7,021
2024	10,205,147	10,485,280	325,618	3,939,385	3,613,767	6,666
Total	**62,155,491**	**52,076,830**	**1,106,131**	**19,565,589**	**18,459,457**	**40,599**

1038 proposals



SESAME

SESAME Proposals Review Committee

Samar HASNAIN (Chair), University of Liverpool, UK

Archaeological and Heritage Sciences	
Mariangela CESTELLI GUIDI (coordinator)	INFN, Italy
Francois FAUTH	ALBA Synchrotron, Spain
Caroline JACKSON	University of Sheffield, UK
Costanza MILIANI	CNR, Italy

Chemical Sciences	
Sofia DIAZ-MORENO (coordinator)	Diamond Light Source, UK
Thomas ELLIS	University of Saskatchewan, Canada
Antonella GLISENTI	Univertity of Padova, Italy
Sarp KAYA	Koç University, Turkey

Life Sciences	
Michel HOUGH	Diamond Light Source, UK
Christophe SANDT	Synchrotron SOLEIL, France
Zehra SAYERS	Sabancı University, Turkey
Lisa VACCARI (coordinator)	Elettra Sincrotrone Trieste, Italy

Materials and Physical Sciences	
Muhammad Javed AKHTAR	PINSTECH, Pakistan
Andrew FITCH (coordinator)	ESRF, France
Bruce RAVEL	NIST and NSLS II, USA
Brian ROSEN	Tel Aviv University, Israel

SESAME

NEXT call for proposals: deadline 29 February

Proposals distribution by sub-committee

- Materials and Physical Sciences
- Life Sciences
- Archeological and Heritage Sciences
- Chemical Sciences

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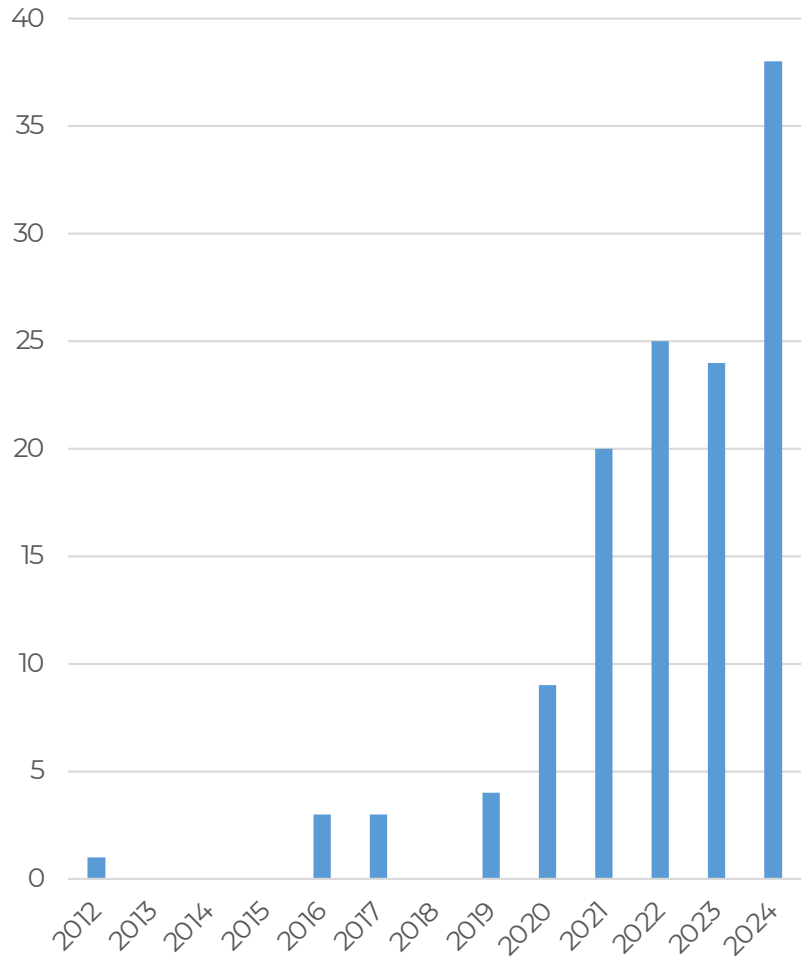


Publications

127

peer-reviewed publications until November 2024

- **Average scientific impact factor > 5**
- **20% of publications have IF > 7**

SESAME

SUNSTONE

SESAME's Upgrading Network for Scientific User Training and Outreach into the Next Era

Coordinator: ESRF

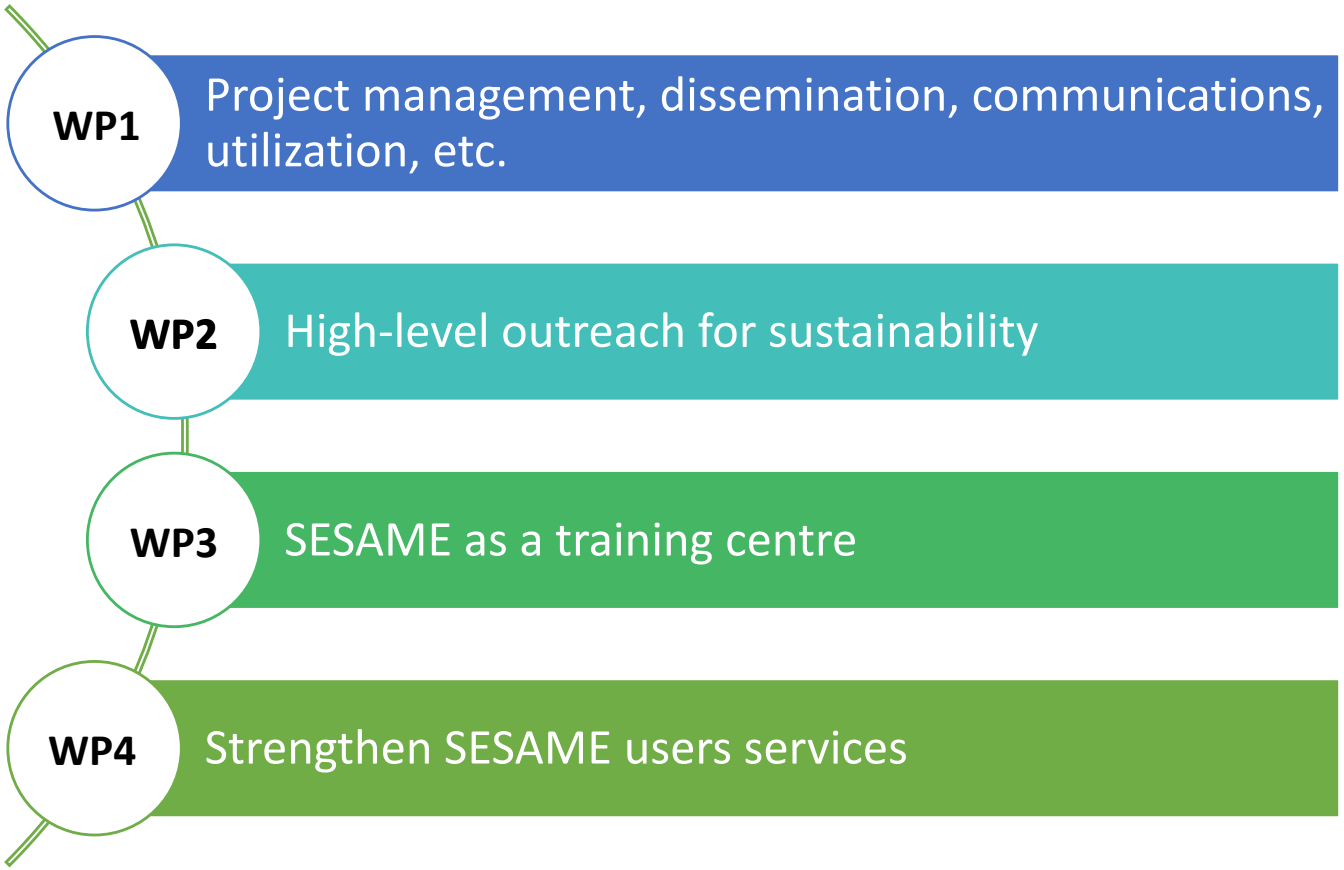
Budget: 1.5M€ + funds from State Secretariat for Education, Research and Innovation (PSI)

Project duration: 42 months

Beneficiaries: ALBA, CYI, DESY, ELETTRA, ESRF, INFN, SESAME and SOLEIL; and PSI as Associate

Start: 01 June 2024

SUNSTONE STRUCTURE



Focus on Members, Potential Members, and Africa

SESAME

SESAME's Key Messages

- **SESAME is now operational and performing well**
- **SESAME is producing world class science**
- **SESAME is continuously growing by the day**

SESAME

Thank you