



CERN

Conceived late 1940s – two aims:

- Enable construction of a facility for **(then) nuclear and (now) particle physics research** beyond the means of individual members
- Foster cooperation between peoples recently in conflict



SESAME

Conceived late 1990s – two aims:

- Enable construction of a facility for a **broad range of scientific research** beyond the means of individual members
- Foster cooperation between peoples

broad range of scientific research.....



broad range of scientific areas

- Synchrotron-light sources allow research in many areas, e.g. biology, physics, chemistry, archaeology, medicine, material science, environmental science, arts,.....
they are ideal facilities for building scientific capacity
- International collaboration is the obvious way for countries with relatively small scientific communities and/or limited science budgets to build a synchrotron-light source



SESAME received much support from non-members. Examples are...

Solar Power Plant (EU)



Sergio Fubini Guest-House (I)



Rossendorf Beamline (D)



The boat at Hamburg harbor on its way to Aqaba, Jordan with BESSY I on board; June 7, 2002



XAFS/XRF Monochromator (UK)



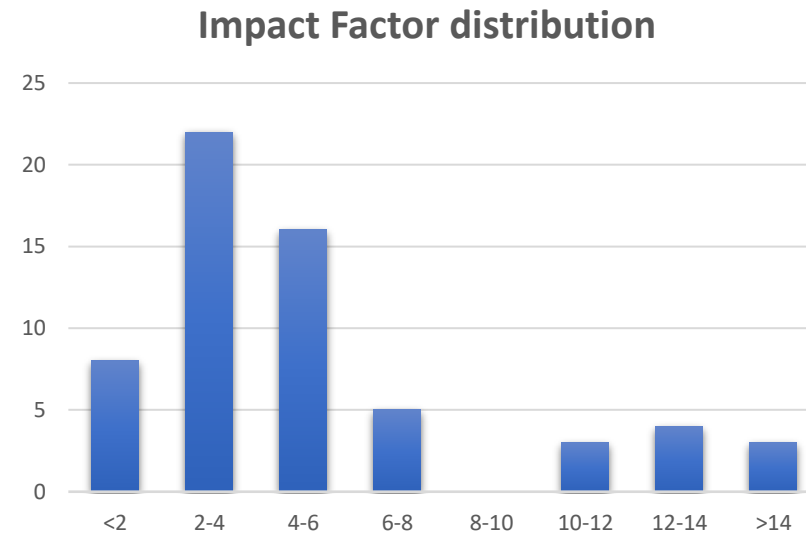
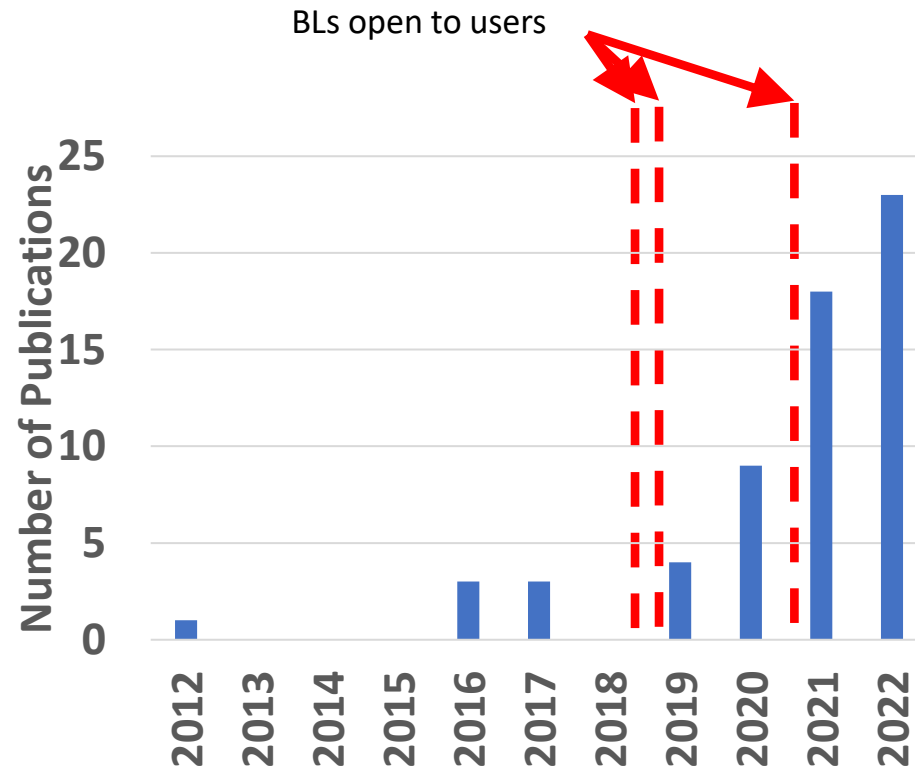
Material Science Beamline (CH)



The 4 RF Cavities (I)

Publications

Nov 2022: 61 peer-review publications
Average scientific impact factor 5.2
30% of publications have IF > 7



Common projects are starting

MOF-based device enables harvesting of atmospheric water from dry, desert air

Harvesting water vapor from desert, arid environments by metal-organic framework (MOF) based devices to deliver clean liquid water is critically dependent on environment and climate conditions.

Formation of the defect dipoles around dopants demonstrated in dielectric ceramics

A team of international scientists from *China, Germany, Norway and Pakistan with SESAME staff* have used the BM08 – XAFS/XRF beamline at SESAME for high dielectric constant materials that are of particular interest as indispensable components in electronics.



SESAME story is a special situation in history where a single facility received so much support from sister organizations and observer countries over an extended period. High level cooperation ensures scientific output, high visibility and productivity.

Why not repeating this story on another continent?

(some) lessons learned



World class international facilities

- train the scientists of tomorrow and produce excellent science
- bridge Cultures and Nations

Important aspects:

- acceptance of diversity is vital
- trust between people is a mandatory ingredient

Scientists can/should/must be ambassadors for peaceful cooperation

CERN and SESAME (and others)
have become key examples for

excellent Science
and
Science Diplomacy