

The FIXLAB facilities

- **Budapest Neutron Centre – BNC** (Budapest, Hungary) with access to various neutron-based instruments to investigate elemental and structural composition
<http://www.bnc.hu/>
- **ATOMKI-HAS** nuclear microprobe (Debrecen, Hungary) for high spatial resolution measurements of samples with a focused ion beam
<https://www.atomki.hu/>
- **AGLAE** ion beam accelerator at **C2RMF** (Paris, France), providing elemental analysis with an external ion beam for whole art objects
<http://en.c2rmf.fr/>
- **IPANEMA**, the platform for ancient material research at synchrotron **SOLEIL** (Gif-sur-Yvette, France) for X-ray, UV-visible and FTIR synchrotron methods
<http://www.synchrotron-soleil.fr/>

Expected users:

- *archaeologists, museologists* who are interested in **characterisation** of Cultural Heritage objects for **provenance studies**
- *conservation scientists* who wish to characterise **micro-details** of altered or unaltered materials to prevent further damages

Calls are published twice a year (in June & December) with an application deadline: **1st October** and **1st April**, respectively. Application forms can be downloaded from http://www.bnc.hu/?q=IPERION_CH

The submitted proposals are evaluated by an international Peer Review Panel. Travel, subsistence and beamtime fee support are available for successful applicants.

Our team looks forward to receive your proposal!



Centre for Energy Research,
Hungarian Academy of Sciences



Wigner Research Centre for Physics,
Hungarian Academy of Sciences



IPERION CH



Integrated Platform for European Research Infrastructure on Cultural Heritage

IPERION CH is an EU-funded integrating activity project carried out in the **Horizon 2020** Capacities Specific Programme "Research Infrastructures".

The project provides transnational access to most advanced scientific instrumentation and knowledge allowing scientists, conservators-restorers and curators to enhance their research at the field forefront. Specialists from arts and natural sciences design new instrumentations, set-up methodologies and develop the most promising technological applications and sustainable solutions to improve diagnostics and monitoring. New extended cooperation among European infrastructures paves the way towards expanding the harmonization of best practices in studies and conservation.

IPERION CH is a **consortium of 23 partners** (universities, museums, research centres and institutions) each are centres of excellence in cultural heritage science.

Amongst other activities, IPERION CH supports users from all institutions of the EU member and associated countries for their transnational access to medium and large-scale facilities in Hungary and France in **FIXLAB** platform. Both single- and multiple facility campaigns are available.

<http://www.iperionch.eu/trans-national-access>

BNC User Welcome Desk:

Dr. Zsolt KASZTOVSZKY kasztovszky.zsolt@energia.mta.hu

Katalin BAJNOK bajnok.katalin@wigner.mta.hu



PROMPT GAMMA ACTIVATION ANALYSIS (PGAA)



- Non-invasive measurement of the bulk elemental composition (Majors and traces)
- Object: min. 0.1g, 0.5-10 cm solid or liquid
- Contact: **Dr. Zsolt Kasztovszky**
kasztovszky.zsolt@energia.mta.hu

NON-DESTRUCTIVE METHODS AVAILABLE AT BNC FIXLAB

<http://www.bnc.hu/>

NEUTRON ACTIVATION ANALYSIS (NAA)



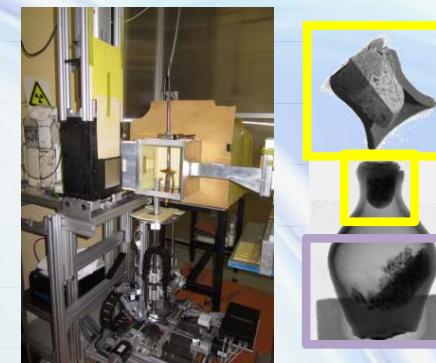
- 5-20 / 50-200 mg sample required for short / long irradiation
- Sensitive to many trace elements (Na-U)
- Contact: **Dr. Katalin Gméling**
gmeling.katalin@energia.mta.hu

NEUTRON AND X-RAY RADIOGRAPHY (RAD)



- 2D or 3D imaging
- visualisation of structural or compositional differences
- 70-250 μm spatial resolution
- Object: max. 5 kg, 20 cm for 3D
- Contact: **Dr. Zoltán Kis**
kis.zoltan@energia.mta.hu

PROMPT GAMMA ACTIVATION IMAGING (NIPS-NORMA)



- Non-invasive bulk elemental composition combined with imaging (elemental map)
- Object: min. 1g, 5-20 cm solid or liquid
- Contact: **Dr. László Szentmiklósi**
szentmiklosi.laszlo@energia.mta.hu

EXTERNAL MILLI-BEAM PIXE (PIXE)



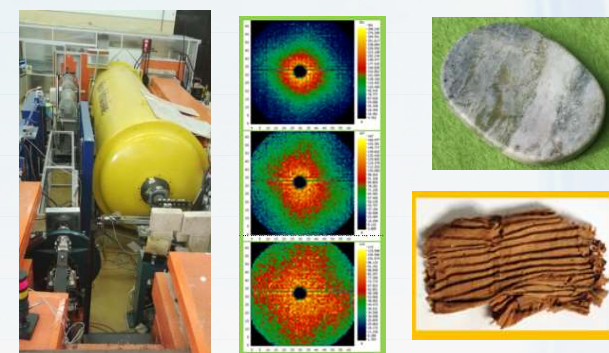
- Non-invasive near-surface elemental analysis of objects (Al-U)
- Beam size: 1 mm
- Large objects can be measured
- Contact person: **Dr. Imre Kovács**
kovacs.imre@wigner.mta.hu

TIME-OF-FLIGHT NEUTRON DIFFRACTION (TOF)



- Non-invasive structure and phase analysis
- Large objects can be measured
- Contact person: **György Káli**
kali.gyorgy@wigner.mta.hu

SMALL ANGLE NEUTRON SCATTERING (SANS)



- Non-invasive study of inhomogeneity, porosity, etc. in materials (1-100 nm)
- Large objects can be measured
- Contact person: **Dr. Adél Len**
len.adel@wigner.mta.hu