1. General information

Country	**Italy**
Region, Place/Closest Town	**Lombardy, Pavia**
Institutions (NAA lab)	**Istituto Nazionale di Ricerca Metrologica (INRIM) and Department of Chemistry of the University of Pavia** **viale Taramelli 12, 27100 Pavia, Italy (websites https://www.inrim.eu and http://chimica.unipv.eu)**
Institution (irradiation facility)	**Laboratorio Energia Nucleare Applicata (LENA) of the University of Pavia** **via Aselli 41, 27100, Pavia, Italy (website http://lena.unipv.it)**
Irradiation facility manager	**Andrea Salvini, Director, +39 0382 987301, andrea.salvini@unipv.it**
Type of neutron source (reactor, spallation, generator, isotopic)	**Research reactor (TRIGA Mark II)**
Source power [MW]	**0.250**
Start of operation of the facility (year)	**1965**
Longer breaks since then	**none**
Availability (hours/year)	**720**

2. Irradiation characteristics

Irradiation channels	
Central channel (CC)	
Φ_{th} [cm^{-2}s^{-1}]	**6.11(16) × 10^{12}**
f (thermal to epithermal flux ratio) [1], α [1]	**15.6(3), -0.036(6)**
Lazy Susan (LS)	
Φ_{th} [cm^{-2}s^{-1}]	**1.02(3) × 10^{12}**
f (thermal to epithermal flux ratio) [1], α [1]	**17.4(3), -0.016(6)**
Rabbit (R)	
Φ_{th} [cm^{-2}s^{-1}]	**2.54(7) × 10^{12}**
f (thermal to epithermal flux ratio) [1], α [1]	**15.7(3), -0.041(7)**
Samples vessels for CC and LS	
Aluminum (int. diameter, int. height) [mm]	**28, 120**
Polyethylene (int. diameter, int. height) [mm]	**22, 80**
Samples vessel for R	
Polyethylene (int. diameter, int height) [mm]	**15, 90**

3. Detection systems

Detector 1, ORTEC HPGe	
Model	**GEM50P4-83**
Relative efficiency (at 1.33 MeV, ^{60}Co)	**50%**
Compton suppressor	**none**
Electronics	**digital**
Background count rate [cps]	**16**
Maximum allowed count rate range [cps] for dead-time correction within ±3%	**0 - 50000**
Peak FWHM (at 1.33 MeV, ^{60}Co) [keV]	**1.90**
Peak FWHM (at 122 keV, ^{60}Co) [keV]	**0.99**
Automatic sample changer (no/if yes number of samples)	**yes, 30**
Detector 2, Canberra HPGe	
Model	**GC3518**
Relative efficiency (at 1.33 MeV, ^{60}Co)	**35%**
Compton suppressor	**none**
Electronics	**digital**
Background count rate [cps]	**8**
Maximum allowed count rate range [cps] for dead-time correction within ±3%	**0 - 50000**
Peak FWHM (at 1.33 MeV, ^{60}Co) [keV]	**1.80**
Peak FWHM (at 122 keV, ^{60}Co) [keV]	**0.90**
Automatic sample changer (no/if yes number of samples)	**yes, 30**
Detector 3, ORTEC HPGe	
Model	**GEMS8530P4**
Relative efficiency (at 1.33 MeV, ^{60}Co)	**50%**
Compton suppressor	**none**
Electronics	**digital**
Background count rate [cps]	**19**
Maximum allowed count rate range [cps] for dead-time correction within ±3%	**0 - 50000**
Peak FWHM (at 1.33 MeV, ^{60}Co) [keV]	**1.90**
Peak FWHM (at 122 keV, ^{60}Co) [keV]	**0.70**
Automatic sample changer (no/if yes number of samples)	**no**

4. Sample conditioning

Drying chamber for lyophilizing samples	yes
Mixer for disintegration of samples	yes
Press for pelletizing powder samples	yes
Ball mill for grinding and blending samples	yes

5. Analysis

Efficiency calibration (regularly, never)	when required
Comparison to standards (if yes, what standards)	**yes, mono-elemental (solid and liquid) traceable standards**
Spectroscopy data used (none, IAEA TECDOC, PGAA Handbook, …)	**k_0 database**
Spectrum evaluation software (Hypermet, k0 IAEA, other)	**Ortec Gamma Vision and Hyperlab**
Data processing software	**Customly developed**

6. Involved manpower

	Number
Scientists	**4**
Post docs	**1**
Research grant holders	**2**
Students	**5**
Engineers	**-**
Technicians	**2**

7. Applications*

R&D	**Metrology**
Research topics	**Laboratory Medicine, Food, Archaeometry and Environment**
Existence of user program	**-**
Industrial projects	**-**
Commercial applications	**Quality Control**
Education (lab practice, MS, PhD, trainees)	**University courses (Radiochemistry, Nuclear and Applied Chemistry)**

Provide the list for a multiple answer

8. Publications

	During last 12 months	During last 5 years	During last 10 years
R&D	6	15	30
By external users	-	-	-
Own research	-	-	-
Other publications	-	-	-

9. Upgrades

Last major upgrades (year, work done)	**2018, Implementation of the k_0-INAA standardisation method**
Planned upgrades (year, work planned)	**2019, PGAA**