A low energy set-up for gamma-ray spectrometry of NORM tailored to the needs of a secondary smelting facility

G. Lutter[a], I. Vandael Schreurs[b], T. Croymans[b], W. Schroeyers[b], S. Schreurs[b], M. Hult[a], G Marissens[a], H. Stroh[a], F. Tzika[a]

a) European Commission, Joint Research Centre (JRC-Geel), Retieseweg 111, 2440 Geel, Belgium
b) Hasselt University, Nuclear Technology – Faculty of Engineering Technology, Agoralaan, Diepenbeek, Belgium

ICRM
INTERNATIONAL COMMITTEE FOR RADIONUCLIDE METROLOGY

- Application of low-level radioactivity technique for industrial needs. No staff with "nuclear" competences
  - Control incoming/out coming products on-site which can contain elevated levels NORMs.
  - Focus on Pb-210 & Po-210 where equilibrium cannot be assumed.
  - Po-210 γ-emission (803 keV) probability only 0.0012% $\Rightarrow$ need for low-level technique
  - 803 keV γ-ray coincides with peak from ^{206}Pb(n,n'γ).
- Installation "on-site" of HPGe-detector with dual electronics chain and hybride-cryostat.
- Simultaneous measurement of Pb-210 & Po-210 using gamma-ray spectrometry
- Software (data-analysis) made user-friendly.

Presentation #101

Mikael Hult

European Commission