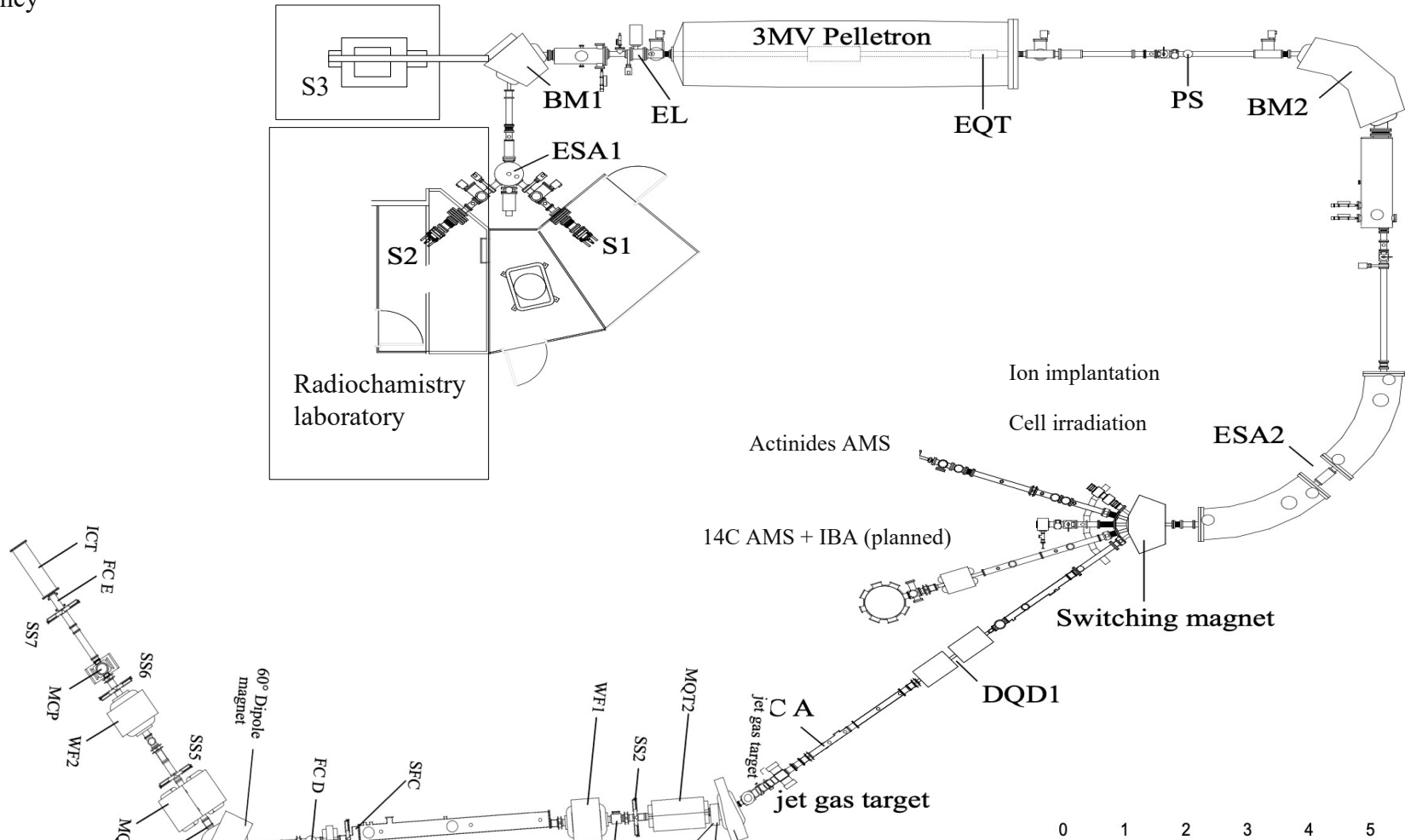


Nuclear physics mid term Plan in Italy

WG3 – Diagnostics and modification of materials with ion beams

- S1 - sputtering for stable ions
- S2 – sputtering for radioactive ions
- S3 - radiofrequency

CIRCE-DMF Tandem Accelerator laboratory 3MV Pelletron
www.circe.unicampania.it



0 1 2 3 4 5

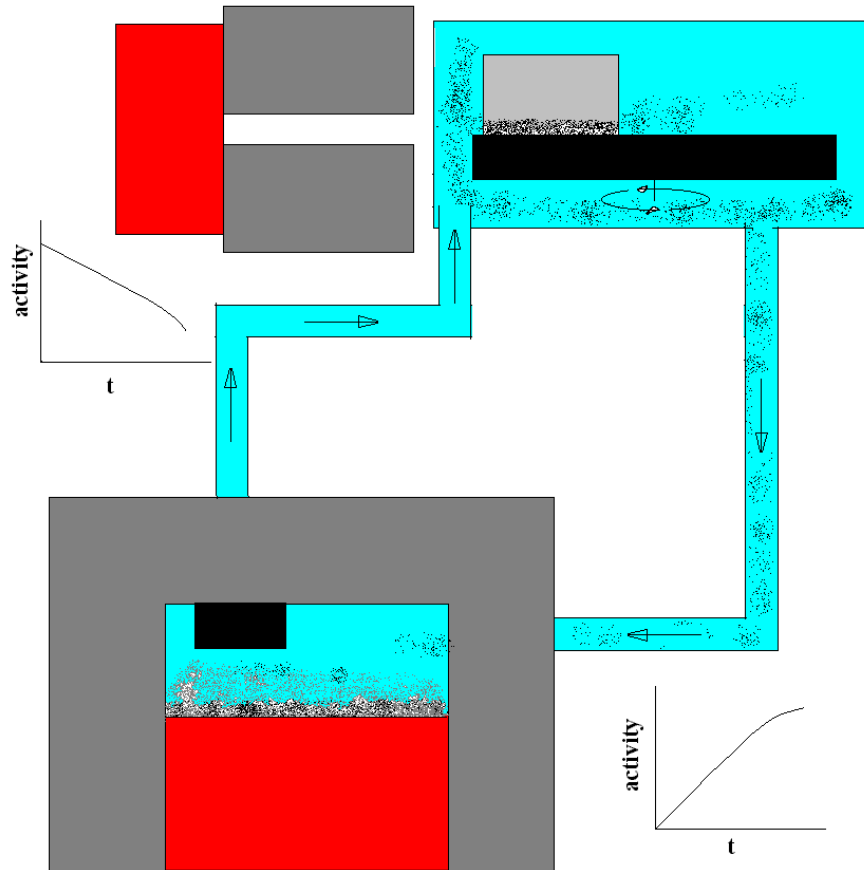


Radiochemistry
laboratory

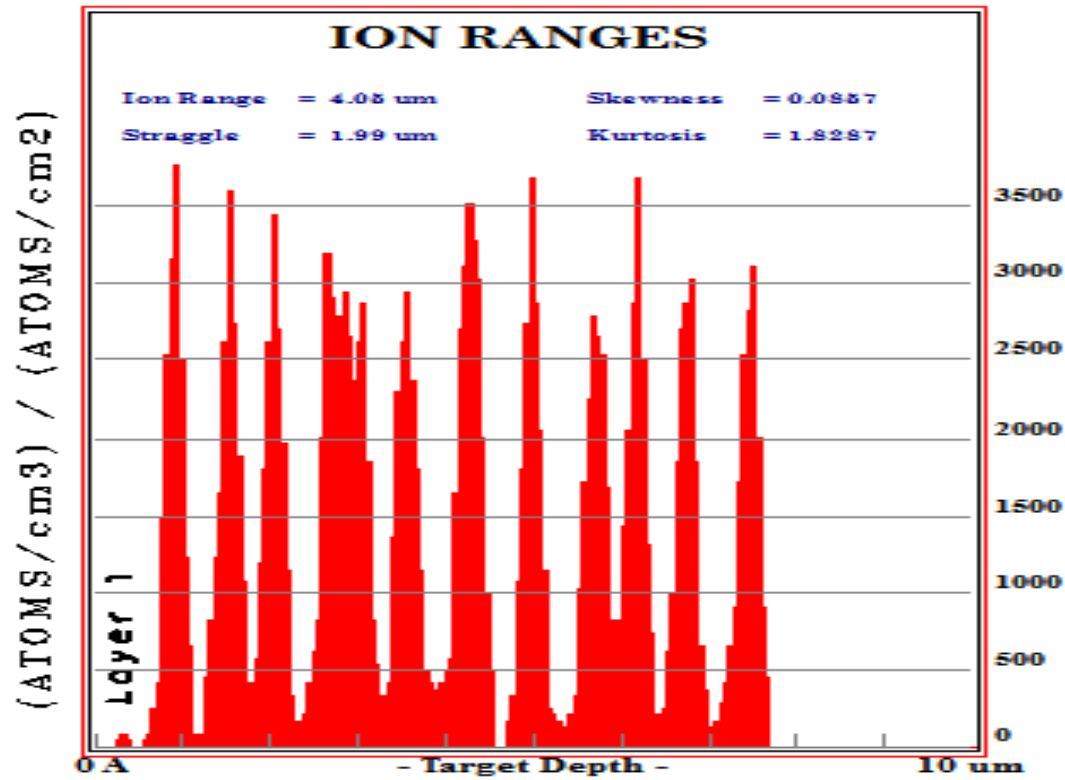
Radioactive ion
beam injector



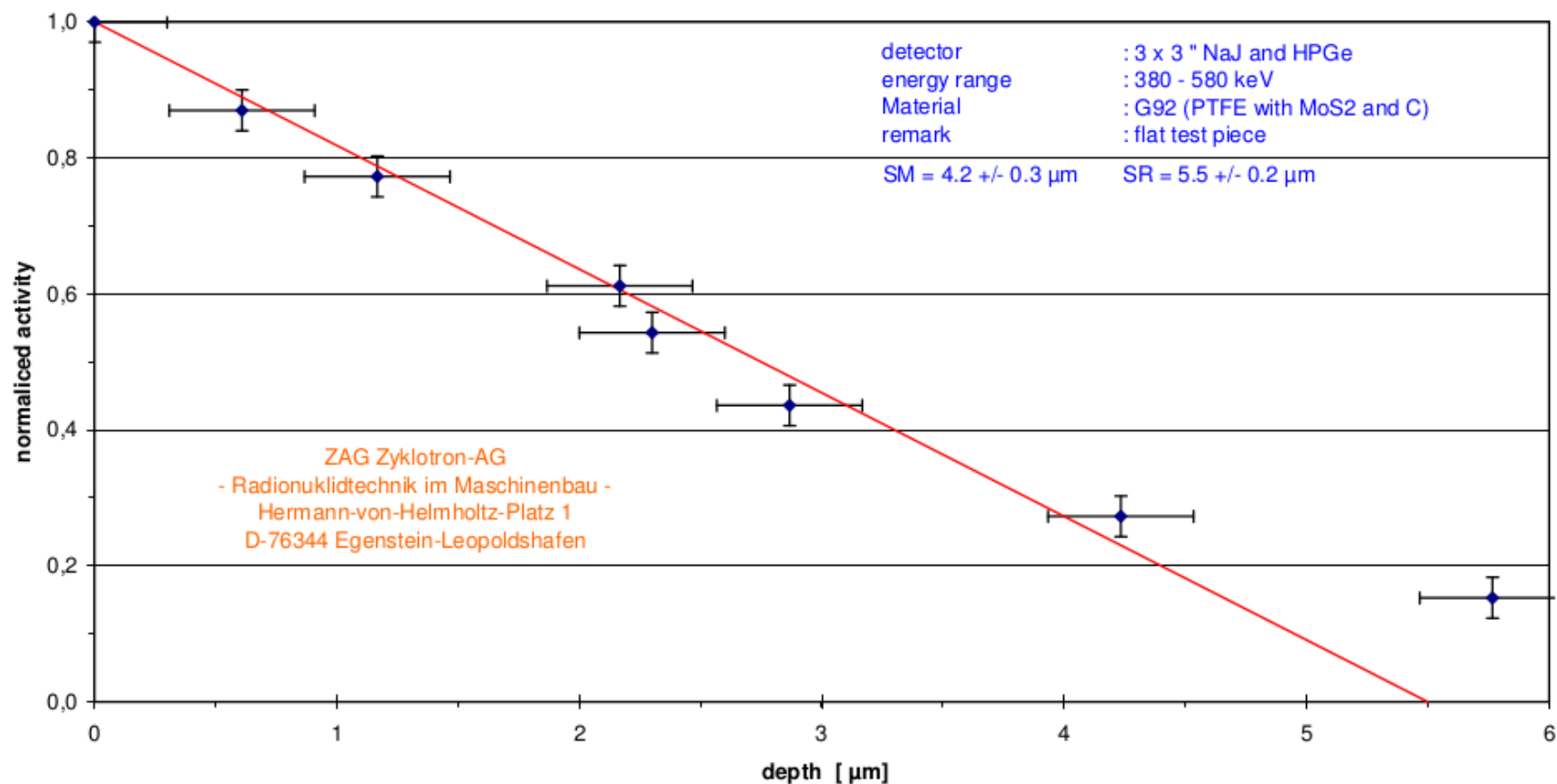
Wear measurement using radiotracers



Depth profile control : foil
degraders+beam energy change



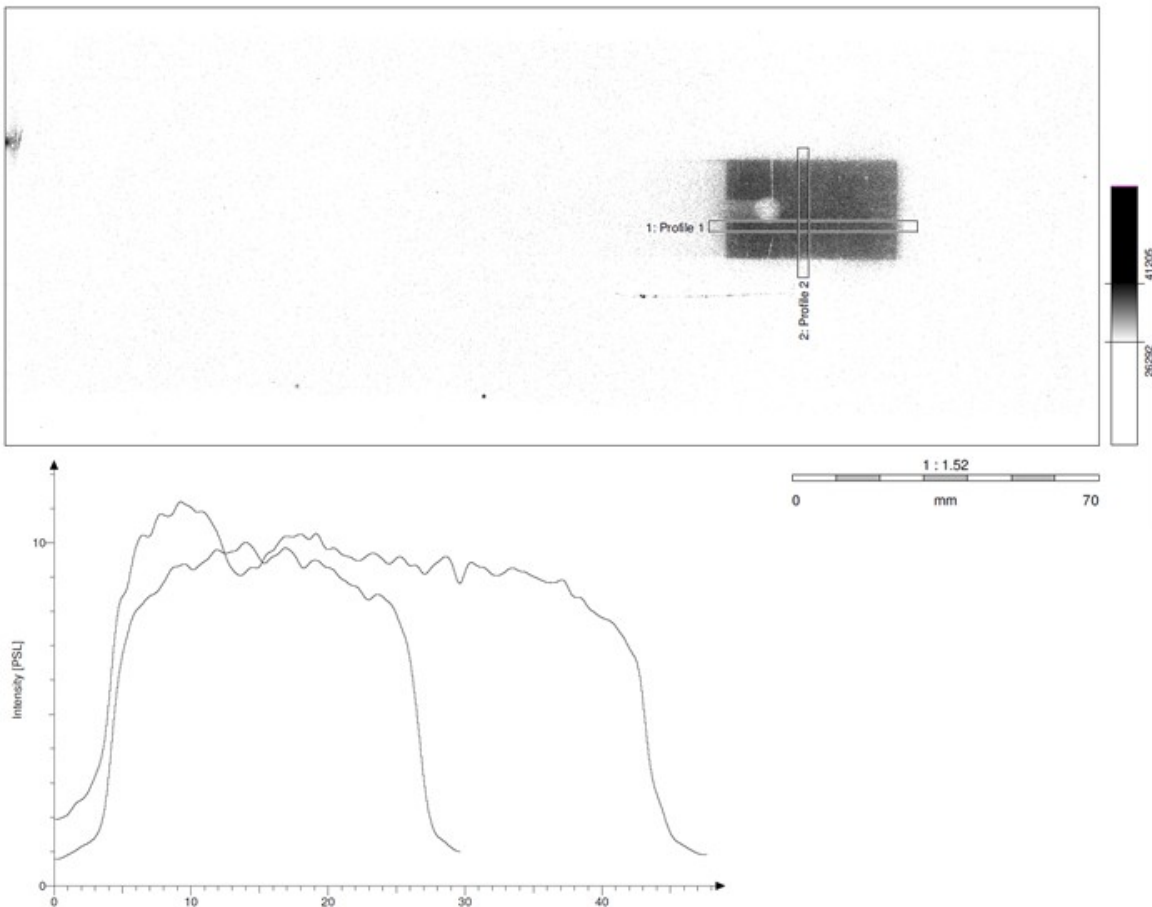
Depth distribution



Lateral distribution

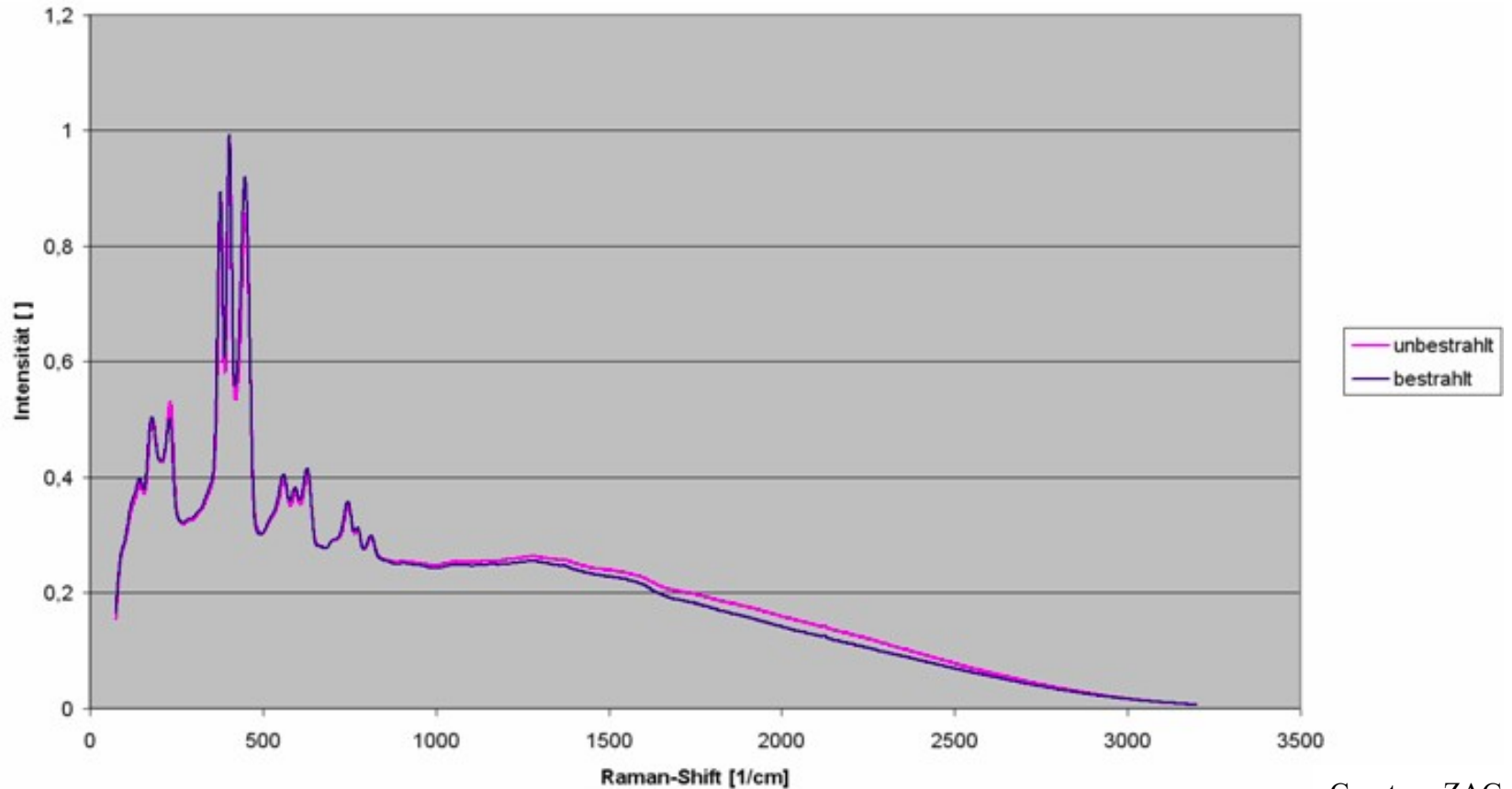
Imaging plate type: 20*40
Scanner: Fuji BAS 2500
Sensitivity: 10000
Latitude: 5
Comment: 112104

Digital resolution: 65536, 16 bit per pixel
Image size: 2000*5000, 100.00mm*250.00mm
Pixel size: 50µm*50µm



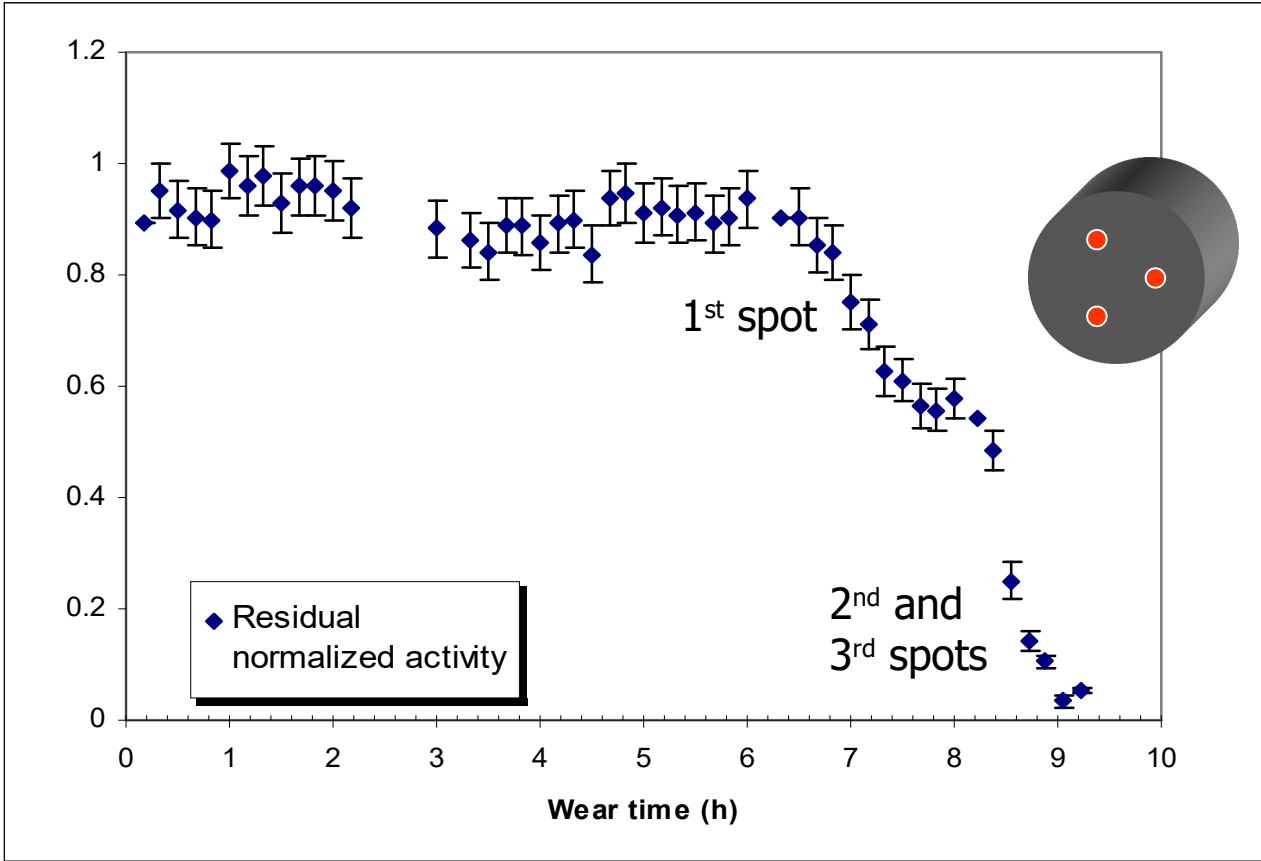
Courtesy ZAG

Radation damage



Courtesy ZAG

Wear measurement using a pin on disk



Possible application to heat shields



Courtesy CIRA

Hydrogen content in materials

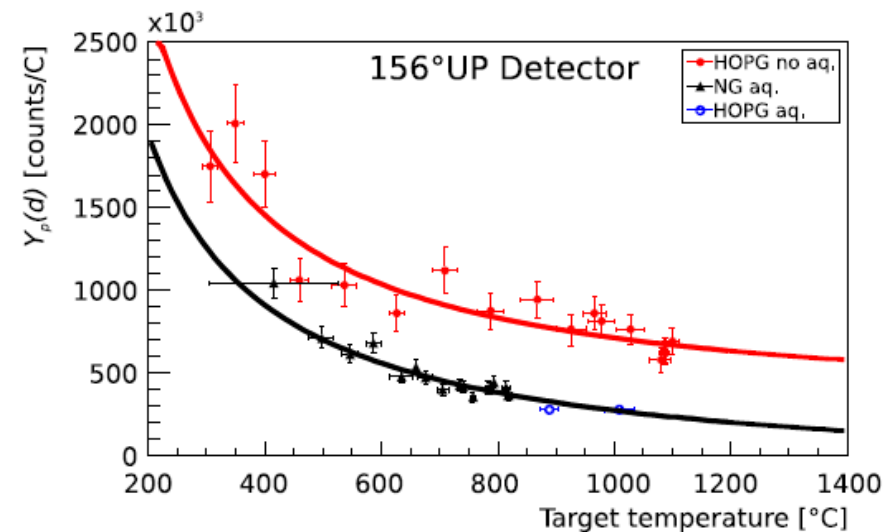
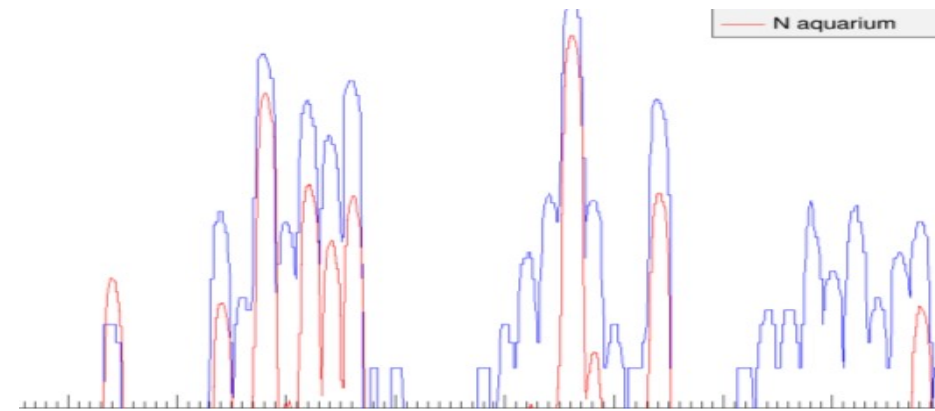
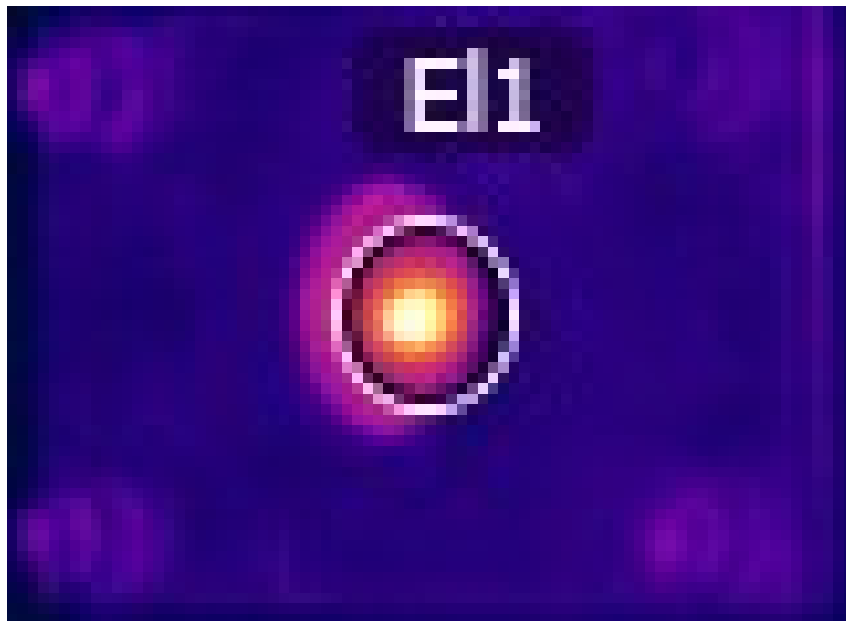
2 stage (Gas-Si) detector array GASTLY

Si strip detector array

IBA

rest gas mass spectrometry

thermography



Characterization of radiation damage

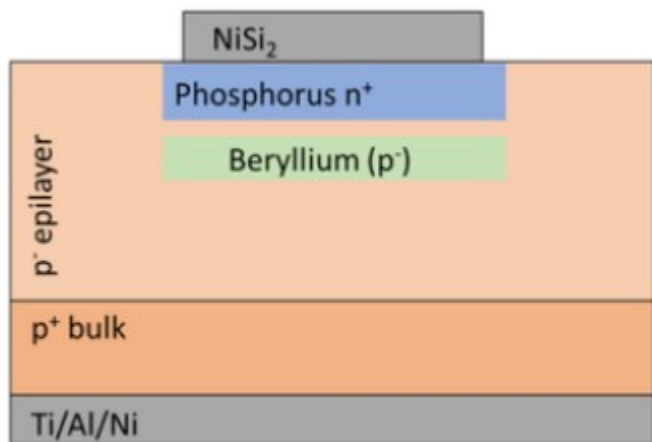
Investigation of semiconductor devices with ^7Be implantation

c-RBS

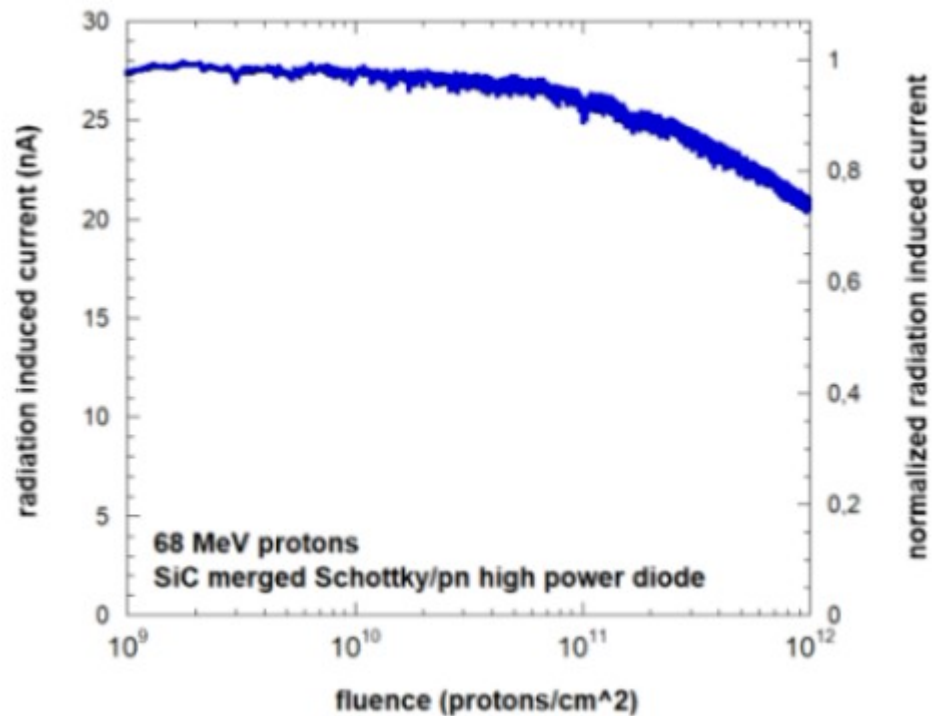
DLTS

SIMS

In situ measurement of the radiation induced current

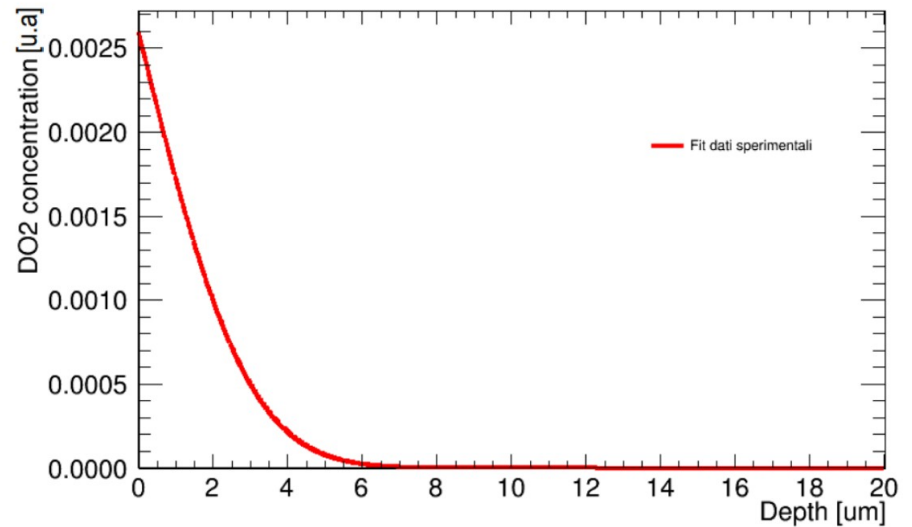
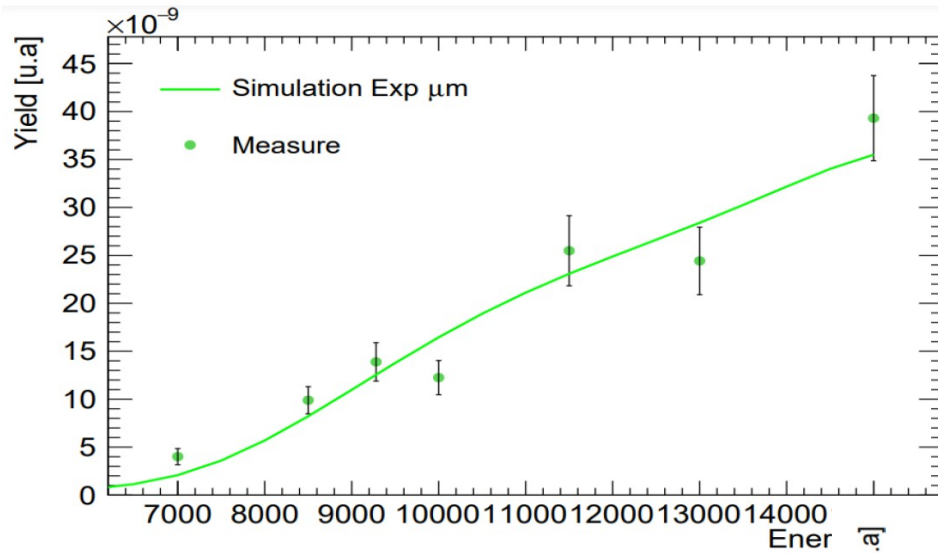


(a)



PRIN AsBeSt
CNR IMM
INFN
UniCampania
UniSalerno

Investigation of water diffusion in materials



KM3NeT