



UNIONE EUROPEA
Fondo Sociale Europeo



Ministero dell'Istruzione,
dell'Università e della Ricerca



PON
RICERCA
E INNOVAZIONE
2014 - 2020

PhD in Physics - XXXIII cycle

Development of a coded mask camera for Gamma Imaging in environmental monitoring applications

Industrial partner



CAEN SyS relies upon an extremely strong foundational knowledge of nuclear measurement instrumentation in developing Radiation Measurement System and Spectroscopy Solution.

Within the PhD project they will collaborate in the implementation of an hardware front-end.

International partner



Narodowe Centrum Badań Jądrowych
National Centre for Nuclear Research
SWIERK

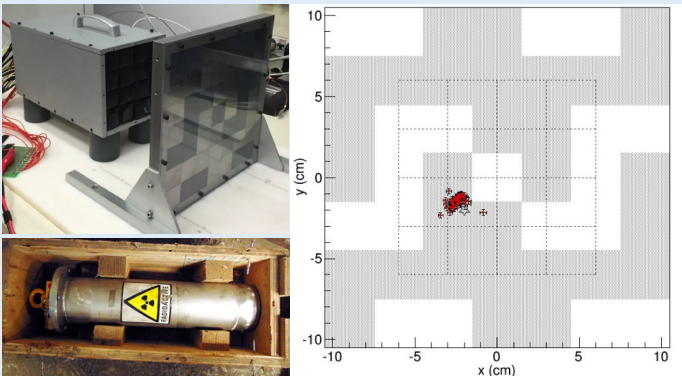
Instytut kategorii A+, JRC collaboration partner

NCBJ fundamental/applied research profile combines nuclear power-related studies with various fields of sub-atomic physics (elementary particle physics, nuclear physics, ...)

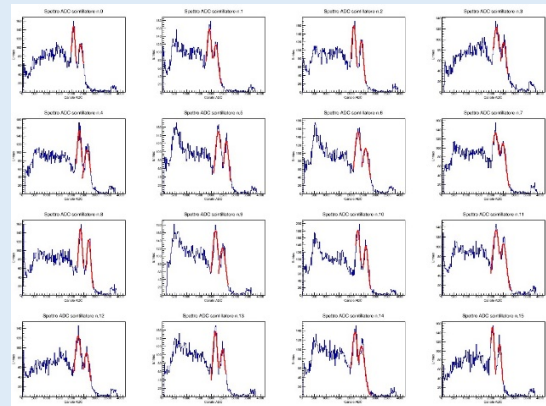
Within the PhD project they will collaborate in the development and testing of the scintillators materials

Description of Activities

Development of a compact Camera for Gamma Imaging and Spectroscopy of radionuclides, in environmental and security applications



On the left a prototype of the instrument, on the right an example of rebuilt positions of a source placed in the star-shape point



Spectra of ^{60}Co recorded simultaneously by the 16 scintillators

Imaging is made by mean of a coded mask. The source movement changes the shape of shadow projected on the scintillators array. Thanks this technique, with a software, can rebuild the gamma source position reading the counting of the scintillators

Industrial partner supervisor

Dr. Massimo Morichi m.morichi@caen.it

International partner supervisor

Prof. Lukasz Swiderski Lukasz.Swiderski@ncbj.gov.pl

Supervisor

Prof. Francesco Giordano
francesco.giordano@ba.infn.it

PhD school in Physics



UNIVERSITÀ
DEGLI STUDI DI BARI
ALDO MORO



Dipartimento Interateneo di
Fisica di Bari

"Michelangelo Merlini"

