



NuSpIn

Nuclear Spectroscopy Instrumentation Network

the network for the **gamma-spectroscopy**
and **complementary-instrumentation** community

Promotion and Coordination

of scientific and technological activities for frontline research

Exchange of knowledge and transfer of expertise

between the working groups and towards young researchers

Optimization

of the use, construction and maintenance of the resources

<http://nuspin.pd.infn.it>



motivation

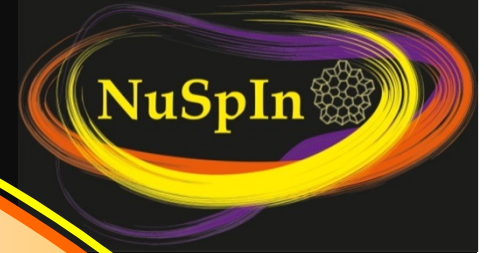
High-resolution gamma-ray spectroscopy is the principal tool for investigations in nuclear structure as it allows to study the excited nuclear states and their properties with high precision.

The sensitivity of gamma-ray devices increases significantly if combined with ancillary detectors for charged particles, heavy ions and neutrons.

High-efficiency gamma-ray detectors and calorimeters based on scintillator materials are essential tools to study weak processes, nuclear dynamics and structure far from stability.

High-complexity experiments require the association of different types of detectors

motivation



The collaborations in nuclear structure are **investing much effort and resources** in developing new instrumentation, experimental methods and techniques for frontline research at the different infrastructures.

Most of these techniques are of **common interest** and the **exchange** of information as well as the development of **synergies** are of great benefit to the whole research community.

the actors



Collaborations on the design, construction, and operation of:

High-resolution Ge arrays

High-efficient scintillator arrays (high energy and fast timing)

Charged-particle detector arrays

Neutron-detector arrays

Setups for beta-decay measurements

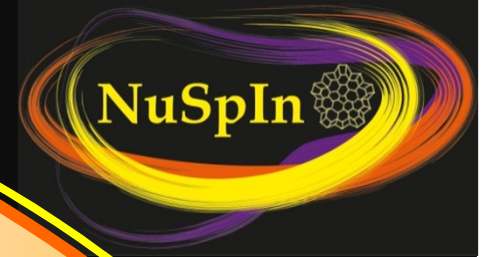
Setups for nuclear-moments measurements

specific actions



- To ensure the efficient and innovative use of the valuable European gamma-ray spectroscopy resources at the different infrastructures, each with its specificity in beam species and energy ranges
- To promote the collaboration and sharing of expertise between different research and technical domains
- To promote the coordination of the experimental campaigns at the different infrastructures providing and exchanging information on their potential opportunities

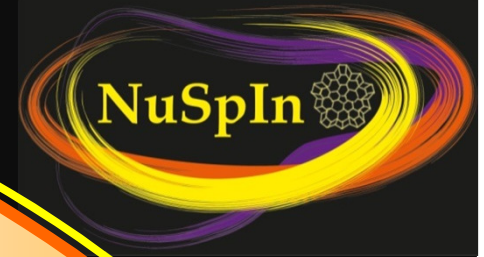
specific actions (2)



- To promote the cooperation in the development, design and construction of gamma-ray and particle detectors
- To encourage and organize the pooling of distributed equipment in order to enhance synergies between complementary resources for common large-scale projects
- To encourage and facilitate the exploration of ground-breaking solutions to pave the way for future generation arrays, both high-resolution gamma spectrometers and complementary devices
- To build bridges between the scientific developments and the applications for the society.



The tasks



task 1

Coordination, promotion and dissemination

- 1.1 Steering Committee:** to coordinate and organize the different activities and tasks
- 1.2 Scientific Committee:** to promote collaborative ventures and to encourage the pooling of distributed equipment
- 1.3 Coordination between the Infrastructures:** to organize annual meetings between the management of the gamma-spectroscopy collaborations and the directors of the hosting infrastructures

organization and budget



The network is managed by a Steering Committee:

INFN-Padova: Silvia M. Lenzi (coordinator)

GSI: Magdalena Gorska (deputy-coordinator)

IN2P3-Orsay: Araceli Lopez-Martens

IFIC-Valencia: Andres Gadea

Uni Liverpool: Andrew Boston

The total budget is 170 k€ distributed in these 5 nodes to allow an efficient and optimized use of the funds

Scientific Committee



Michael Bentley
Alison Bruce
Giacomo de Angelis
Gilles de France
Gilbert Duchene
Maria Jose' Garcia Borge
Juergen Gerl
Georgi Georgiev

Paul Greenless
Jan Jolie
Silvia Leoni
Adam Maj
Johan Nyberg
Peter Reiter
Berta Rubio
Calin Ur

task 2



Working Groups (D. Mengoni):

to cooperate on the use, research and development of the detectors and to improve the performance and compatibility of the devices: mechanics, electronics, data acquisition, simulations tools, R&D

2.1 WG1: High-resolution gamma-ray spectroscopy.

Convener: **Francesco Recchia**

2.2 WG2: Particle detectors. Convener: **Marlene Assie**

2.3 WG3: High-efficiency and fast-timing scintillator detectors.

Convener: **Enrique Nacher**

2.4 WG4: Devices for nuclear moments and transition probabilities.

Convener: **Alain Goasduff**

task 3



Collaboration Workshops

organized **on an annual basis** in different countries, will allow the whole community to meet together, to present scientific results, to discuss on common problems, to strengthen collaborations and to start new ventures.

WG Workshops

NUSPIN 2016 Workshop

Nuclear Spectroscopy Instrumentation Network



and

AGATA Physics Workshop

Associated Events

- Kick-off Meetings of the NUSPIN Scientific Committee and Working Groups
- Annual Meeting of the AGATA Collaboration Council

Organizing Committee

S. M. Lenzi (chair, Padua), A. Boston (Liverpool),
A. Gadea (Valencia), M. Gorska (Darmstadt),
A. Lopez-Martens (Orsay), S. Lunardi (Padua),
D. Mengoni (Padua), D. R. Napoli (Legnaro),
J. Nyberg (Uppsala), F. Recchia (Padua),
J. J. Valiente Dobón (Legnaro)

Secretariat

Elena Pavan (INFN, Padova)
Adriana Schiavon (Università di Padova)
Info: <http://nuspin.pd.infn.it/nuspin2016>

San Servolo, Venice, 27 June - 1 July, 2016



Dipartimento
di Fisica
e Astronomia
Galileo Galilei



Forthcoming Workshop



NUSPIN Workshop 2017

GSI, June 26-30, 2017

task 4



Transfer of knowledge

4.1 training courses for new users

for a new generation of researchers, ready to exploit in the best way all the essential tools needed for their research

4.2 exchange of key personnel

to ensure common knowledge base



Participants

- Croatia:** Ruder Boskovic Institute (Zagreb), U-Zagreb
- Finland:** JYFL
- France:** GANIL, CEA, CSNSM-Orsay, IPN-Orsay, IPHC-Strasbourg;
Subatech, Nantes
- Germany:** GSI, U-Koln, TU-Darmstadt
- Greece:** NCSR-Demokritos
- Hungary:** ATOMKI-Debrecen
- Italy:** INFN: LNL, Padova, Milano, Firenze, Napoli
- Poland:** HIL, U-Warsaw, IFJ-Pan Krakow
- Romania:** NIPNE, IFIN-HH/ELI-NP
- Spain:** IFIC-Valencia, UAM-Madrid, U-Huelva, U-S. de Compostela,
IEM-CSIC; CIEMAT-Madrid, GFN-U-Complutense, U-Salamanca
- Sweden:** KTH, U-Lund, U-Uppsala
- Turkey:** U-Ankara, U-Istanbul
- UK:** STFC Daresbury, U-Liverpool, U-Manchester, U-Surrey, U-York,
U-Birmingham, U-West Scotland