



# Nuclear Spectroscopy

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.

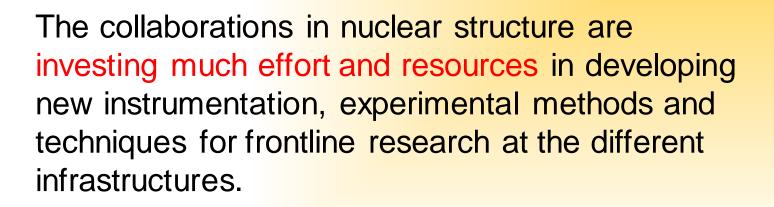
The sensitivity of gamma-ray devices increases significantly if combined with ancillary detectors for charged particles, heavy ions and neutrons.

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

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## motivation



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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.





# 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

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To encourage and facilitate the exploration of ground-breaking solutions to pave the way for future generation arrays, both highresolution gamma spectrometers and complementary devices

To build bridges between the scientific developments and the applications for the society.



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### 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

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#### Meeting Tuesday 28<sup>th</sup> at 14.30

**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



#### Working Groups :

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.

2.2 WG2: Particle detectors.

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

2.4 WG4: Devices for nuclear moments and transition probabilities.

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#### Meeting Tuesday 28<sup>th</sup> at 14.30





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.

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#### **WG Workshops**





#### 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 NuSpIn

#### 4.2 exchange of key personnel

to ensure common knowledge base

# 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-MartensIFIC-Valencia:Andres GadeaUni Liverpool:Andrew Boston

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

## **Participants**

- Croatia: Ruder Boskovic Institute (Zagreb), U-Zagreb
- Finland: JYFL
- France: GANIL, CEA, CSNSM-Orsay, IPN-Orsay, IPHC-Strasbourg; Subatech, Nantes

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- 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-Istambul
- UK: STFC Daresbury, U-Liverpool, U-Manchester, U-Surrey, U-York, U-Birmingham, U-West Scotland

# NUSPIN 2016 Workshop Nuspin

Nuclear Spectroscopy Instrumentation Network

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. Gadee (Valencia), M. Gorska (Darmstad),

A. Lopez-Martens (Orsay), S. Lunardi (Padua), D. Mengoni (Padua), D. R. Napoli (Legnaro), J. Nuberg (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 AGATA Physi

the Worksh

San Servolo, Venice, 27 June -1

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