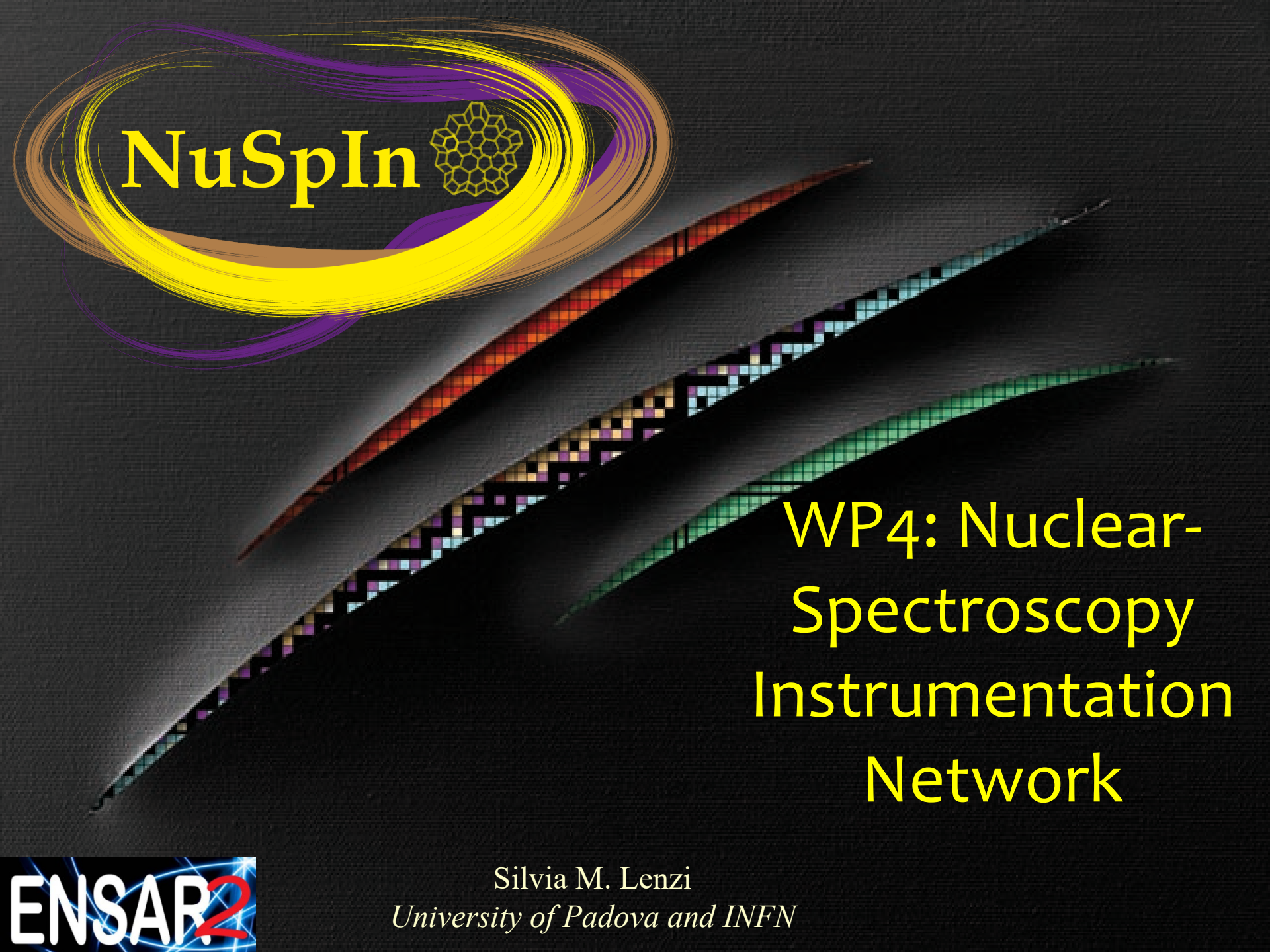




NuSpIn



WP4: Nuclear-
Spectroscopy
Instrumentation
Network



ENSAR²

Silvia M. Lenzi
University of Padova and INFN

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

Development of synergies and Optimization

of the use, construction and maintenance of the resources

Actors



Collaborations on the Operation, Design,
Construction and Maintenance 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

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

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



The tasks



task 1

Coordination, promotion and dissemination



1.1 Scientific Committee: to promote collaborative ventures and to encourage the pooling of distributed equipment

Michael Bentley (York)
Alison Bruce (Brighton)
Giacomo de Angelis (LNL)
Gilles de France (GANIL)
Gilbert Duchene (Strasbourg)
Maria Jose' Garcia Borge (Madrid)

Juergen Gerl (GSI)
Georgi Georgiev (Orsay)
Paul Greenless (Jyvaskyla)
Jan Jolie (Cologne)
Wolfram Korten (Saclay)
Silvia Lenzi (Milano)

Adam Maj (Krakow)
Gerda Neyens (CERN)
Johan Nyberg (Uppsala)
Peter Reiter (Cologne)
Berta Rubio (Valencia)
Calin Ur (Bucharest)

1.2 Coordination between the Infrastructures: to organization of meetings between the management of the gamma-spectroscopy collaborations and the directors of the hosting infrastructures

- ✓ Meeting of the Directors of hosting laboratories and the AGATA management: GANIL, 22nd February 2018



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

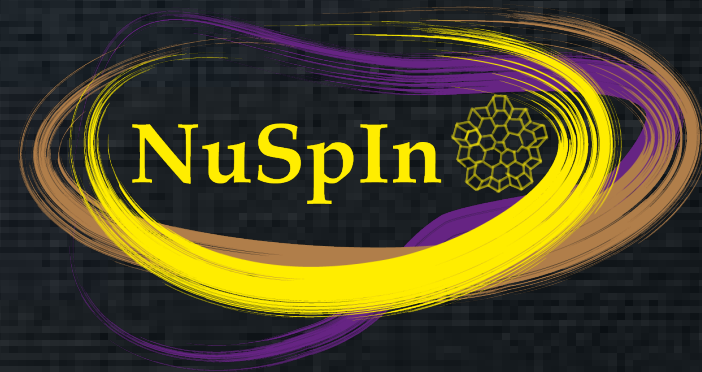
WG1: High-resolution gamma-ray spectroscopy
Convener: **Francesco Recchia**

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

WG3: High-efficiency and fast-timing scintillator detectors
Convener: **Enrique Nacher**

WG4: Devices for nuclear moments and transition probabilities
Convener: **Alain Goasduff**

task 3



Collaboration Workshops

organized on an **annual basis** in different countries,
to allow the whole community to meet together

- to present scientific results
- to discuss on common problems
- to strengthen collaborations
- to start new ventures

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



Achievements



NUSPIN Workshops



Since 2016 there have been four Collaboration Workshops during **the last week of June** where recent results at the different TNA and theoretical developments were presented and discussed:

1. Venice 2016 (85 participants)
2. Darmstadt 2017 (94 participants)
3. Valencia 2018 (80 participants)
4. Orsay 2019 (84 participants)

In **the same week of the Workshops**, took place the meetings of:

- **the Working Groups:**
 - presentation of recent developments
 - discussion on collaboration and exchange of expertise
- **the Scientific Committee:** coordination



NUSPIN 2016 Workshop

NuSpIn

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, Padova), A. Boston (Liverpool),
A. Gadea (Valencia), M. Górska (Darmstadt),
A. Lopez-Martens (Orsay), S. Lunardi (Padova),
D. Mengoni (Padova), D. R. Napoli (Legnaro),
J. Nyberg (Uppsala), F. Recchia (Padova),
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



Other Meetings and Workshops



A topical workshop on **Total Absorption Spectroscopy: present and near future**, was organized at IFIC, Valencia (Spain) on 16-19th December 2019

NUSPIN Workshops have hosted the two **AGATA Physics Workshops** (2016, 2018) and all the **AGATA Annual Collaboration Council Meetings**

Experts on Ge detectors have visited other labs to **train new users**



Cologne Training School



Hands-on Workshop on Ge detectors in Cologne (September 4-7, 2018): for physicists, engineers and technician working in the maintenance and repairing of Ge detectors: thought for 20 participants → 40 accepted (the request was larger but the goal was really a "hands-on")



Cologne Training School (cont.)



Topics:

- Introduction to the basics of Ge detectors
- History of Ge detectors
- Production of Ge detectors: Planar, coaxial, segmented detectors
- Cryostats and vacuum issues
- Properties and test procedures of Ge detectors
- Diagnosis of failures and strategies for repairs
- Specific problems of different detector types: standard n-type, p-type, Clover detectors, segmented detectors, encapsulated detectors (MINIBALL, AGATA)



Liverpool training school



NUSPIN School in Liverpool on Gamma -ray detectors: for PhD and postdocs
Liverpool 3-7th June 2019

Aimed at postgraduate students, postdoctoral researchers and electronics engineers who are not experts in germanium detector systems.

- introduction to germanium detector systems
- training in essential measurement techniques.

There were 22 participants to the School

Liverpool training School (cont.)



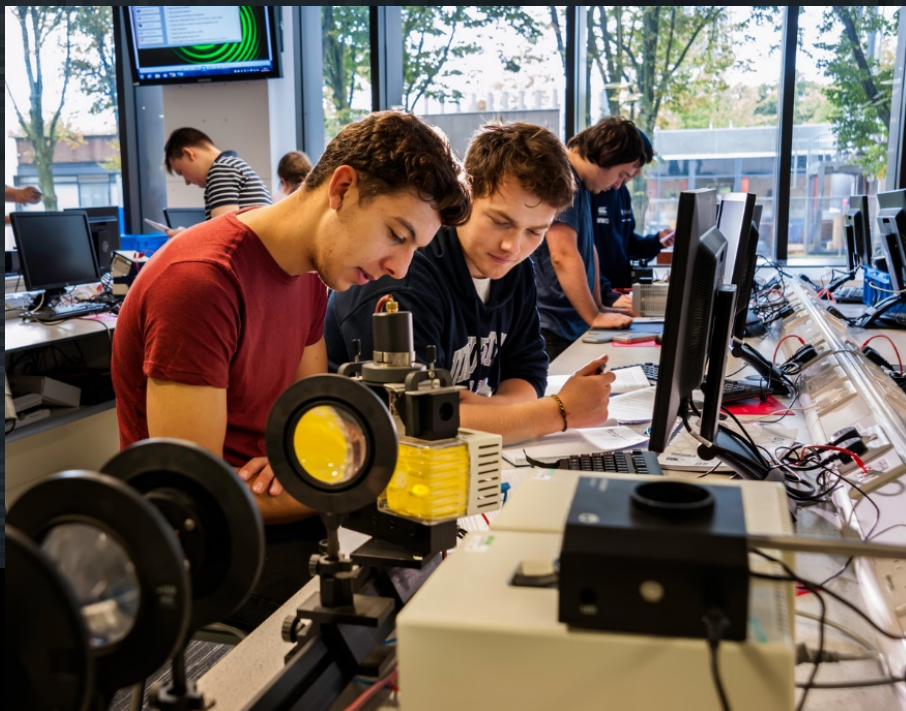
The course was located in the state-of-the-art **CTL Radiation laboratory**
Provided **hands-on experience with germanium detector systems**

Lectures presented by:

- A. Boston, C. Unsworth, D. Judson (UoL & STFC Daresbury Lab)
- B. Pirard (Mirion Technologies)

Five practicals

- (1) and (2) Germanium detector testing, energy resolution and efficiency
- (3) Managing detector vacuum systems
- (4) Segmented detector data analysis
- (5) Customer Acceptance Testing & Trouble shooting detector systems



Nuclear Reactions for spectroscopists



The study of Nuclear Structure at the new facilities with radioactive beams requires a deep knowledge of the reaction dynamics and mechanisms involved in order to optimize the production and selectivity with reduced beam intensities with respect to those delivered by stable ion facilities.

A training course on Nuclear Reactions theory and techniques will be held on 9-10 June 2020 in Seville with theoretical and practical lectures.

The school is open to young and experienced researchers



#February11

5th International Day of
Women and Girls in Science



NuSpIn



Thank you for
your attention