

4^{NEU} Neutron4: Heritage Science

9th - 12th September 2025

Bosco Chiesanuova (VR), Italy

Neutron techniques for
non-destructive technological study
of Cultural Heritage artefacts

Neutron4: Heritage Science is a workshop dedicated to the **applications of neutron techniques in Heritage Science** for the non-destructive technological study of ancient artefacts and materials.

Interdisciplinarity and complementarity of knowledge are crucial aspects of Heritage Science and Neutron4 aims at establishing strong links between experts in this field and neutron scientists. The workshop will start with a one-day **crash course** on neutron techniques, followed by a two-day **conference** with the **keynote lectures** by Gilberto Artioli (University of Padova) and Monica Galeotti (Opificio delle Pietre Dure, Firenze). **Oral presentations** may cover all the topics of the research in Cultural Heritage using neutron and muon. On the other hand, **posters** may focus on the broader range of analytical techniques, as well as on case studies or materials for future investigations.

Neutron4 is organised by the Società Italiana di Scienze Neutroniche (SISN) and it will be held from **9th to 12th September 2025 in Bosco Chiesanuova (Italy)**, a small mountain village near Verona.

Neutron4 website: www.sisn.it/neutrons4/

Contacts: info@sisn.it

Why neutron?

Neutron techniques offer the possibility to address many of the main analytical challenges on conservation and technological study, in a completely non-invasive way. From imaging to diffraction, from spectroscopy to activation, in the last decade there has been a surge of scientific activity dedicated to the study of Cultural Heritage artefacts. The interpretation of the results requires collaboration across multiple disciplines including metallurgy, conservation, crystallography, art history, material science, and physics.

Why Neutron4?

To encourage the multidisciplinary collaboration in Cultural Heritage using neutron and muon

To show the current state of the art of neutron techniques in Heritage Science

Why a crash course?

To learn how to fully exploit the potentialities of neutron-based techniques in heritage science.

To understand how and where neutrons can leverage your research.

To plan an experiment and prepare a successful proposal.

Who can attend?

The event aims at creating a network between experts in neutron and muon techniques and newcomers: students (Master's, PhD) and early career researchers in Cultural Heritage, Conservation Science, Archaeology, and related fields, as well as museum, art gallery, and Cultural Heritage professionals.

Official language: English.

Neutrons4: the crash course

The crash course will present the main **neutron techniques used in heritage science**.

Topics include a general overview of neutron properties, imaging, diffraction, and activation analysis. Moreover, a lecture will be dedicated to the procedures for obtaining beamtime as well as for preparing an experiment at a large-scale facility with ancient artefacts.

Lectures will be given in English by world-leading experts from Universities, Research Institutions and the most important Neutron Large-Scale Infrastructures.

Neutrons4: the conference

Oral presentations may cover all the topics related to materials analysis with neutron and muon-based techniques also in combination with other analytical tools. Talks will be 20 minutes long, including a few minutes for questions.

Posters are open to all the archaeometric studies, with or without neutron or muon, as well as to the presentation of possible case studies and materials for future investigations.

All the participants are encouraged to present a contribution.

Abstracts must be prepared using the conference template. Registration and abstract submission are possible on the conference website: www.sisn.it/neutrons4/.

Save the dates

15th April 2025	Registration and abstract submission opening.
10th June 2025	Abstract submission deadline.
15th June 2025	Notification of abstract acceptance for oral and poster contribution.
30th June 2025	Preliminary programme.
15th July 2025	Registration deadline.

Conference fee

The conference fee includes the conference and crash course materials, coffee breaks, lunches and dinners, including the social dinner.

Regular fee: 250 €

Junior fee*: 150 €

* Undergraduate and PhD students, post-doc up to three years after their PhD and without a permanent position.

Venue: Bosco Chiesanuova (Verona, Italy)

Bosco Chiesanuova is a small mountain village situated near Verona, in the heart of the Lessinia upland. Bosco Chiesanuova is connected to Verona by bus (bus line 110 from “Verona Porta Nuova” train station, www.atv.verona.it). Verona offers both plane (Verona Airport “Valerio Catullo”, www.aeroporto.verona.it) and high-speed train connections (train station “Verona Porta Nuova”, www.trenitalia.com, www.italotreno.com and int.bahn.de/). Other nearby airports are Venezia (Venezia Airport “Marco Polo”), Bologna (Bologna Airport “Guglielmo Marconi”) and Bergamo (Milan-Bergamo Airport “Il Caravaggio”). Bosco Chiesanuova can be also reached by car following the road sign to “Bosco Chiesanuova” or “Lessinia” from the motorway exit “Verona Est”.

A list of hotels will be uploaded on the conference.

Preliminary program

Sala Olimpica, Teatro Vittoria
Bosco Chiesanuova (Verona, Italy)

Tuesday 9th September 2025

18:00 - 19:30 Welcome & registration
20:00 Dinner

Neutrons4: the crash course

Wednesday 10/09/2025

9:00 - 10:00 General introduction on neutrons & comparison with other probes
10:00 - 10:30 Coffee break
10:30 - 12:00 Imaging: introduction & case studies
12:00 - 14:00 Lunch
14:00 - 15:30 Neutron diffraction: introduction & case studies
15:30 - 16:30 Elemental analysis with neutrons
16:30 - 17:00 Coffee break
17:00 - 18:00 Experiments with neutrons: from the proposal to the publication
20:00 Dinner

Neutrons4: the conference

Thursday, 11th September 2025

9:00 - 9:50 Keynote lecture: Gilberto Artioli
9:50 - 10:30 Oral presentations
10:30 - 11:00 Coffee break
11:00 - 12:40 Oral presentations
12:30 - 14:30 Lunch
14:30 - 16:30 Oral presentations
16:30 - 18:00 Poster session
20:00 Social dinner

Friday, 12th September 2025

9:00 - 9:50 Keynote lecture: Monica Galeotti
9:50 - 10:30 Oral presentations
10:30 - 11:00 Coffee break
11:00 - 12:00 Oral presentations
12:00 - 12:45 Round table: Neutron beamtime, projects and opportunities
12:45 - 13:00 Conclusions
13:00 - 14:00 Light lunch



Neutron4: Heritage Science

9th - 12th September 2025

Bosco Chiesanuova, Italy

Scientific Committee

Francesco Cantini, CNR-IFAC Sesto Fiorentino & INFN-CHNet (Italy)

Francesco Grazzi, CNR-IFAC Sesto Fiorentino & INFN-CHNet (Italy)

Anna Fedrigo, Institut Laue-Langevin (France)

Nikolay Kardjilov, HZB (Germany)

Laszlo Rosta, Budapest Neutron Centre (Hungary)

Floriana Salvemini, ANSTO (Australia)

Fabio Santaniello, University of Trento (Italy)

Antonella Scherillo, STFC ISIS (United Kingdom)

Burkhard Schillinger, MLZ - FRMII (Germany)

Alan Williams, Loughborough University (United Kingdom)

Marco Zanatta, University of Trento (Italy)

Organizers

Francesco Cantini, CNR-IFAC Sesto Fiorentino & INFN-CHNet (Italy)

Francesco Grazzi, CNR-IFAC (Italy)

Fabio Santaniello, University of Trento (Italy)

Marco Zanatta, University of Trento (Italy)

Sponsors



www.TQsrl.com



www.tqsrl.com

www.alfatest.it



**Società Italiana di
Scienze Neutroniche**
Associazione di Promozione Sociale