

Nuclear Department  
Nuclear Systems for Energy Division

## Symposium on ENEA ReseArch For Innovative Nuclear application

### SERAFIN workshop



*A platform to showcase ENEA's cutting-edge research and foster collaborations in nuclear science and technology*

Dear Colleagues,

We are pleased to announce the **2<sup>nd</sup> ENEA NUC-ENER Division Workshop**, named **Symposium on ENEA ReseArch For Innovative Nuclear application (SERAFIN) workshop**, which will take place **in presence** on **17-18 June 2025** at the **Aula Magna Enrico Mattei, Faculty of Engineering**, Viale del Risorgimento 4, 40136 Bologna (BO). The workshop aims to showcase research and activities conducted within our division, providing a platform to share results, foster collaboration, and highlight innovative developments.

We invite all members of the division, including newcleo employees affiliated with the ENEA centers in Bologna and Brasimone, to participate in this call and submit their work. During the event you will have the opportunity to present your research to our Division and an audience **of professors and PhD candidates from the University of Bologna** and other **external invited attendants**. Selected contributors will increase our visibility in the academic and scientific community.

#### Important Communication

- To ensure you receive **all future communications** about the workshop, please **save our official email address [serafin.workshop@outlook.com](mailto:serafin.workshop@outlook.com) in your contacts** or **mark it as a trusted sender**.
- In the coming days, **we recommend checking your spam or junk folder**. If you find our emails there, **please mark them as "Not Spam"** to avoid missing important updates.

#### Key Dates

- Abstract submission deadline: **11 April 2025**.
- Notification of acceptance: **18 April 2025**.

- Extended Abstract submission deadline: **19 May 2025**.
- Notification of Extended Abstract Reviews: **26 May 2025**.
- Revised Extended Abstract submission deadline: **3 June 2025**.

Due to the tight schedule for organizing the sessions, **NO DEADLINE EXTENSIONS WILL BE GRANTED**.

## Abstract Guidelines

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Abstract submissions will be considered for **Oral or Poster presentations**. A total of **16 oral presentation slots** are available, with **4 presentations per session**. Oral presentations are slotted for **15 minutes** and must be **presented in English**. The presenters must **be in presence** and **no Microsoft Teams link will be provided**. A **Poster session** will be considered based on the number of submitted works and location availability, and they will be displayed during the dedicated sessions, with authors available for discussion.

### 1. Selection Process:

- Submissions must specify **one of the four workshop sessions** to which they are aligned.
- Submitted abstracts will be evaluated by a scientific committee.
- Selected contributions will be assigned to either **Oral** or **Poster** presentations based on their quality, relevance, alignment with the workshop sessions and location availability.

### 2. Requirements for Selected Abstracts:

- **Oral presentations:** Authors selected for oral presentations will receive guidelines and a deadline for submitting an **extended abstract**.
- **Posters:** Authors selected for poster presentations will **not need to submit an extended abstract** but will receive guidelines for creating and presenting their poster.

### 3. General Rules for Authorship:

- No **sensible data** should be included in the research presentation. The **event** will be **public**.
- Abstracts must present **original work** conducted **within the ENEA NUC-ENER division**.
- Submissions must **not** have **been presented** at the **previous ENEA NUC-ENER division workshop**.
- Data presented should be **no older than two years**.
- **Single-author** submissions are **not permitted**.

- All authors must belong to the ENEA division or be newcleo employees affiliated with ENEA centers in Bologna and Brasimone.
- Each participant must be the first author on only one submission.

#### 4. Format:

- Abstracts must be written in **English**.
- Should not exceed **250 words** (excluding spaces, the title, authors, and affiliations).
- References must be avoided.
- Abstracts should contain relevant information describing **background, methods, results, and a conclusion or summary**. The sections must not be explicitly labelled as such.
- Research subject with preliminary results can also be submitted.
- The abstract must be **upload in DOCX** format following the **official DOCX template**, available for download at the following [link](#).

#### 5. Submission

- Abstracts must be submitted exclusively via **INDICO platform** at the [“Call for Abstract” workshop’s page](#).

#### Extended Abstract and Oral presentation Guidelines

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If your work has been selected as Oral presentation, follow the instructions:

- Extended abstract template can be found [here](#);
- Follow all the rules inside the template;
- Send the extended abstract to [serafin.workshop@outlook.com](mailto:serafin.workshop@outlook.com) with subject: “Extended Abstract – [Your Last Name], Session [X]”.
- Pay attention to the deadline indicated in the paragraph “Key Dates”.

In order to prepare the presentation please download the official template [here](#).

- The usage of the **Official template is mandatory**;
- Within the **16<sup>th</sup> June 2025** please **send us your presentation in pptx format** to [serafin.workshop@outlook.com](mailto:serafin.workshop@outlook.com) with subject: “Oral presentation – [Your Last Name], Session [X]”.

#### Poster guidelines

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If your work has been selected as Oral presentation, follow the instructions:

- **Dimensions:** 70x100 cm (portrait orientation);
- Download the poster template [here](#);
- **Delivery:** Bring printed poster to the workshop. Mounting materials will be provided;
- Within the **16<sup>th</sup> June 2025** please send the Poster in **pdf format** to [serafin.workshop@outlook.com](mailto:serafin.workshop@outlook.com) with subject: "Poster - [Your Last Name]". We need it for the creation of the workshop summary report.

## Workshop Sessions

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The workshop will feature the following thematic sessions:

### 1. Safety and Risk Assessment in Nuclear Installations

- *Advanced methodologies for safety analysis:* Probabilistic Safety Assessment (PSA), Fault Tree Analysis (FTA), and Event Tree Analysis (ETA).
- *Severe accident modelling and mitigation:* Simulation and experimental studies on accident scenarios and mitigation strategies.
- *Risk-informed decision making:* Applications of risk assessment in design, operation, and regulation.
- *Innovative tools for safety monitoring:* Real-time monitoring systems, predictive analytics, and digital twins.
- *Experimental validation of safety systems:* Testing and validation of safety-related components and systems.

### 2. Innovative Design and Modeling of Nuclear Systems

- *Advanced simulation tools for nuclear system design:* CFD, thermal-hydraulics, and multi-physics modelling
- *Optimization of reactor performance:* Core design, fuel management, and thermal efficiency.
- *Integration of nuclear systems with renewable energy sources:* Hybrid energy systems and grid stability.
- *Small Modular Reactors:* Design challenges and opportunities.

### 3. Advanced Technologies for Future Nuclear Applications

- *Materials science for next-gen reactors:* High-performance materials for Gen-IV and fusion reactors.
- *Innovations in fuel cycles and waste management:* Closed fuel cycles, reprocessing, and waste minimization.

- *Digitalization and AI applications in nuclear technology:* Predictive maintenance, data analytics, and machine learning.
- *Nuclear applications beyond energy:* Medical, industrial, and space applications.

#### 4. Experimental Campaigns and Facility Updates

- *Cutting-edge experimental campaigns:* Highlights from recent experiments and their impact on nuclear science and technology.
- *Facility-driven research:* How experimental infrastructure enables breakthroughs in nuclear applications.
- *Instrumentation and measurement techniques:* Advanced tools for data collection and analysis in nuclear experiments.
- *Cross-disciplinary experiments:* Synergies between nuclear science and other fields.
- *Facility updates and future developments:* Upgrades, new capabilities, and planned initiatives at ENEA's experimental facilities.

#### Evaluation Process

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All submissions will undergo **peer review** by a scientific committee.

Evaluation criteria include:

1. **Relevance to the sessions:** Alignment with the thematic focus of the workshop.
2. **Innovation:** Originality and novelty of the proposed work.
3. **Methodological rigor:** Soundness and clarity of the methodology.
4. **Interdisciplinarity:** Potential for cross-disciplinary collaboration and impact.
5. **Relevance for partnerships:** Applicability and relevance for fostering future collaborations.
6. **Novelty:** The work should address current challenges or advancements in the field.

#### Important Notes

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- The workshop agenda will be finalized and shared after the selection of presentations.
- For inquiries, please contact: [serafin.workshop@outlook.com](mailto:serafin.workshop@outlook.com)

**We look forward to your contributions and to making this workshop a success!**

**Best Regards,**

**Workshop Organizing Committee**

*Gianmarco Grippo*

*Pietro Cioli Puviani*

*Saverio Quaranta*

*Sara Monari*

*Mariano Tarantino*