



**BUILDING EUROPEAN
NUCLEAR COMPETENCE**
THROUGH CONTINUOUS ADVANCED
AND STRUCTURED EDUCATION
AND TRAINING ACTIONS



ISSUE 02/2023

ENEN# Bulletin

SUMMER

Quarterly
Newsletter

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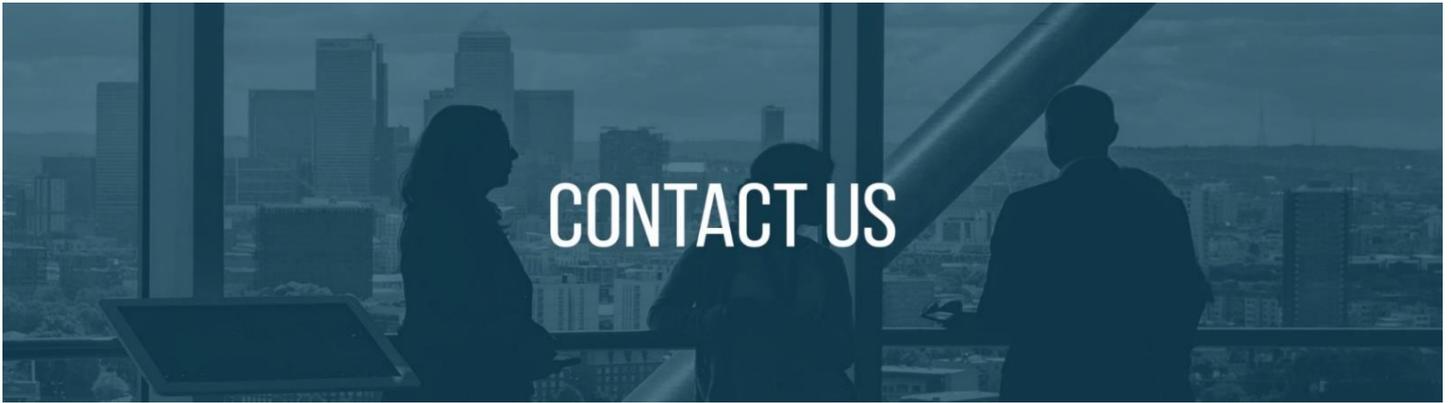


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Contents

Contact Us	3
Focus - NUCLEAR ART Competition.....	4
Event Schedule 2023	8
ENYGF KRAKOW – 17th PhD Prize & Event.....	8
The 3rd European Nuclear Competition and Summer School.....	12
ENEPP Newsletter	18
GRE@T-PIONEER Courses	19
Winter School on “Nuclear Waste Safety and Management”	20
Reminder	21
Scientific Dating – An Encounter Across Disciplines	21
Course on the Deterministic Modelling of Nuclear Reactor Multi – Physics	21
ENEN# Webinars	22



CONTACT US



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Focus

NUCLEAR ART Competition

This is a competition for all the nuclear artists out there!

We asked participants to show us 'WHAT NUCLEAR MEANS TO YOU' and we have been receiving lots of beautiful work of arts from all over the world for a total of 44 entries. Some sent a painting, some a pastel drawing, some others preferred more 'graphics' or digital techniques...the variety is amazing.

We have received masterpieces from: Italy, France, Czech Republic, Romania, Ukraine, Portugal, Spain, Hungary, Bulgaria, Philippines, Peru, India, Morocco, and the UK. Artists belongs to two categories: junior, between 12 and 17 years of age and senior, between 18 and 35 years of age.

All the entries are published on the ENEN facebook page <https://www.facebook.com/ENENaisbl>. The author of the work of art that received the highest number of 'likes' will be invited to join us in Brussels on 21-22 September 2023.

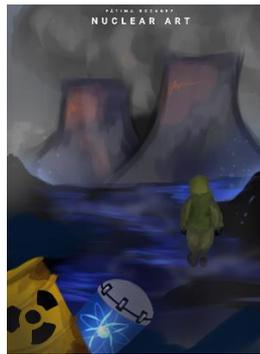
Here follows a carousel of all received masterpieces, to appreciate them in bigger size and higher definition, please visit the ENEN facebook page.



AGNES



BLANKA



FATIMA



Симона

ROXANA-
ALEXANDRAELENA-
ALEXANDRA

CRISTINA



ANDREI-MARIAN



DARA



LEONOR



MARIO-GABRIEL



PEDRO



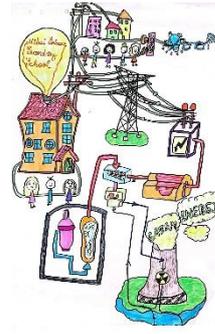
ALEXANDRA-
MARIA



MILANA



ELENA-RALUCA



ALEXANDRU -
ALEXIA - ARIANA -
SOFIA - KARINA -
ALEXANDRU



MARIA-FLAVIA



RODRIGO



ANDREI-FRANCISC



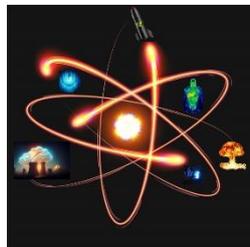
IONUT-GABRIEL



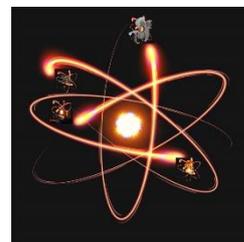
CATARINA



SARA



ZOBAER (1)



ZOBAER (2)



SARAH



LORENZO



RIDHI



NICOLETA-CLAUDIA



ANNA-MARIIA



TOMMASO



SZILVIA & ENIKO



MARELL (1)



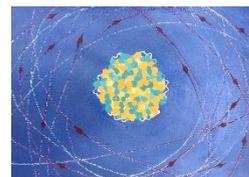
MERCEDES



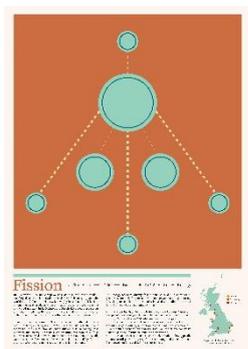
MATILDA



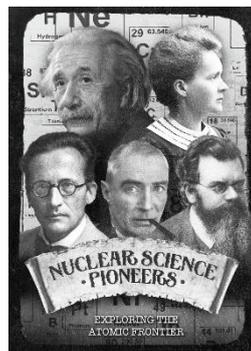
KRISTYNA



EMA



LIV



ACHRAF



DESLAVA



ZSOLT



VIGHNESH



DEA



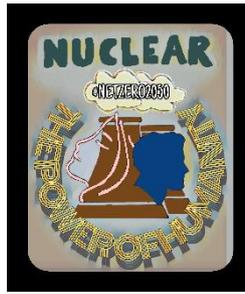
NIKOLINA



KARMEN



JENNY



MARELL (2)



ANTONIA



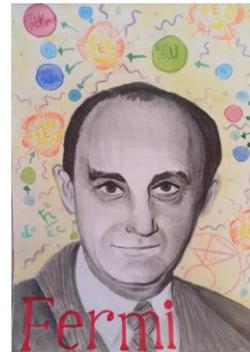
MICHEL



GIULIA



MAY



LUCIJA

We have also received special off-competition tribute from a nuclear professional who is also a musician. You will find here: https://youtu.be/cso78GM3FXI?si=b4iT_JimvhYNUB57

The musical score is for a Mezzo-soprano and Piano. The Mezzo-soprano part has lyrics: "The fu - ture is nu - cle - ar!" and "Nu - cle - ar for life!". The piano part includes chords like C, C#dim7, D9, G, Cm, and D7. The score is numbered 63 to 66.

"The Future is Nuclear" - a ballad written by Titus Tielens as a goodbye to his former employer NRG|PALLAS (with apologies for the lack of a real pianist and choir).



Roberta CIRILLO is working as Project Manager and Communication Officer at ENEN. She is responsible of all ENEN communication channels, manages several EU-funded project leading the Dissemination and Communication working package and acts coordinator for the TOURR project. Physicist and Nuclear Engineer by training, she complemented her education with Energy Management and Innovation & Business Creation courses.

Event Schedule 2023

ENYGF KRAKOW – 17th PhD Prize & Event
(8-12 MAY, 2023)

The 17th ENEN PhD Prize & Event took place in the framework of the European Nuclear Young Generation Forum – ENYGF 2023, which was held on May 8-12 in Krakow, Poland.

THE 17TH ENEN PHD PRIZE & EVENT



The following Finalists were selected among all the received applications, to present their research works in the Event:

Matthieu REYMOND, “Laser heating for the study of the behaviour of nuclear fuel under hypothetical accidental conditions”

Antonio JIMÉNEZ-CARRASCOSA, “Systematic assessment of nuclear data libraries for Sodium-cooled Fast Reactors simulation”

Pauline FOUQUET-METIVIER, “Study of melting temperatures of (U,Pu)O₂ SFR fuels: influence of Pu and Am contents and oxygen stoichiometry”

Giacomo GREGORI, “Electrochemical measurement of thermodynamic properties of corrosion products in lead-bismuth eutectic cooled nuclear reactors”

Nadia Curie DEMPOWO, “Consideration of cationic interdiffusion for modelling the sintering of nuclear ceramics at the grain scale”

Cédric SÉNAC, “Predicting Intergranular Ductile Fracture in Nuclear Materials”

Cristiano CIURLUINI, “Design and thermal hydraulic transient analysis of primary cooling systems for tokamak fusion reactors”

Diego MORENO MARTINEZ, “Molecular Dynamics Study of the Separation of Uranium (VI) on Solid Support”

Margot VANHEUKELOM, “Predicting radiocesium transfer from soil to crop in a global scale: the role of soil weathering stage”



The 3 Winners of the ENEN PhD Event & Prize 2023 are:

- **Emilie BAUDAT**, “Development of highly selective radiochemical methods for strontium-90 characterization in radioactive waste”
- **Lisa LAMPUNIO**, “Data-Driven Gaussian-Process-based Uncertainty Quantification Assessment of Inlet Velocity Profiles on Turbulent Thermal Mixing within T-junctions”
- **Riccardo COCCI**, “Statistical learning and inverse uncertainty quantification in nuclear thermal-hydraulic simulation: application to the condensation modelling at the safety injection”

The three winners were selected from the finalists according to the evaluation of the Jury based on their presentations and the work delivered within the application and at the conference.



This year event was highly remarkable because of the friendly and competitive spirit of the participants where the questions between the fellow finalists raised the interest and admiration for each other’s work. With this activity, ENEN aims to promote the research work of PhD students. In order to set up a bridge between PhD students and professionals in the nuclear field. The ENEN PhD Events are co-sponsored by the European Nuclear Education Network Association (ENEN), the European Commission Joint Research Centre (JRC), and the organizer of the international conference.

ENEN team interviewed the participants of the ENEN PhD Event and Prize 2023 in regard to their feedback from the involvement into PhD Event and Prize activities in 2023.

Do you consider this experience as valuable for your future carrier?

Yes, for sure. This event has a number of added values:

- An opportunity to share and discuss your scientific results with the community.
- A chance to find like-minded colleagues interested in the same research area.
- An opportunity to get new ideas for your research.
- A chance to obtain a prize which will be a good support in further development as researcher: more scientific publications, participation in the conferences, promotion of the research results, etc.

Was it important for you to let everybody know about the research activities of you and your team?

Of course! We implement our research activities to contribute to development of the EU nuclear energy field and innovations in there, and it is very important to have such a platform where we can share our research results and activities.

Was it interesting for you to listen to the presentations of the works of the other ENEN PhD Even and Prize participants?

Frankly speaking, I was rather nervous before delivery of my presentation, that's why was not concentrated into presentations delivered before mine. However, I noticed interesting topics and discussed them with the colleagues during the breaks. We have established a WhatsApp group where we can stay in touch with each other and continue discussion of the points we are commonly interested in.

Have you improved your professional network by the contacts you got in the course of your involvement into ENEN PhD Even and Prize?

It was considerably improved by the new contacts with the other participants of the ENEN PhD Event and Prize 2023. We have even organised a special WhatsApp group to stay in touch.

At the same time, we have met a lot of interesting experts and researchers from all over Europe during the various events and workshops of the ENYGF Conference as well as socializing activities.

What are your feelings about the Jury and their attitude during the competition?

I appreciate an opportunity to have such experienced and qualified experts as a jury of the ENEN PhD Even and Prize. The competition was run in a friendly and kind atmosphere which facilitated smooth delivery of the presentations.

What are your feelings about a room where the ENEN PhD Even and Prize took place?

I was happy that the room was rather small and cosy, it enforced a friendly atmosphere we had during the competition. I would have felt much more nervous if I had had to deliver my presentation in a big conference room.

Do you have ideas for improvement of the ENEN PhD Even and Prize? Do you need to add anything else?

All in all, it was excellent, however, if by any chance some experts from the industry could be involved it would be valuable and supportive for cooperation between research and industry.

I support an idea to have ENEN PhD Even and Prize as a side event of the big conferences and similar events, it facilitates communication between researchers.

I would use this opportunity to say a big thank you to ENEN Association team who established and organised this event, supported our attendance of this event and other related activities of ENYGF 2023 and reviewed and acknowledged our research works as those which require attention and even award in some cases.



Kateryna PILIUHINA is a Project Manager at ENEN. She is an Energy Engineer by education and a nuclear addicted person by heart. Before joining ENEN she had an experience of working for the Ukrainian Government and European Commission support organisations in Ukraine where managed about 15 international nuclear and radiation safety projects in the nuclear field varying from nuclear fuel diversification at NPPs to decommissioning and environmental remediation of the former uranium processing plant. In ENEN Kateryna manages and provides communication support to several EU-funded projects and acts as a leader for one of them (SaTE project).

The 3rd European Nuclear Competition and Summer School for Secondary Schools (3-7 July, 2023)

ENEN2plus project organized the 3rd European Nuclear Competition and Summer School for Secondary School Pupils during 3-7 July 2023 as part of its project to revive the interest of young generations in the nuclear sector. Teams had to have two pupil members and one teacher. The task of the participants was to compose a 3-4 minutes' video on the different nuclear disciplines. The best 16 videos can be found on the following YouTube link:

<https://www.youtube.com/playlist?list=PLSBELiwBbICNnN5afhoVjacMEydU9MI-0>

The sixteen winner teams travelled to Budapest University of technology and Economics, Hungary where they presented their project live at the 3rd European Nuclear Competition and Summer School.

This video summarizes some of the activities carried out during the Summer School:

<https://www.youtube.com/watch?v=hKHZlpy4EAE>

The jury only decided on the three identical awards and the most artistic work, since the most popular video was selected by the public based on the number of their YouTube likes. Everyone had an equal chance to collect these, as the videos were posted at the same time and voting was possible for the same period of time. The winners received a cash award and a medal.

The winners in alphabetic order are:

- **Alpha-ntastic Duo (Italy):** Martina Ghigliazza (teacher), Giulia Vianello, Sophie Ruth Bassett
- **AstroMars (Romania):** Angelica Gherghelas (teacher), Miruna Maria Udrea, Stefan Ioan Bradean
- **FusePower (Spain):** Lidia Ranz Villiarino (teacher), Natalia Merchan Garcia, Raul Magallon Ramon

Most artistic video is:

- **Energizer (Ukraine):** Tetiana Karpova (teacher), Polina Diachyna, Artem Zinko

Most popular video is:

- **Lighting Panda (Czech Republic):** Petr Vetsika (teacher), Kristyna Bulková, Materina Vomácková



During the Summer School, the members of the jury gave excellent lectures, and we performed laboratory work in the Training Reactor of the Budapest University of Technology and Economics, the Radiation Therapy Centre and Radiobiology Department of the National Oncology Institute, and we were able to participate in the radioactive source simulation with the Energy Research Centre. We thank all three institutions for their support.



Csilla PESZNYÁK is Medical Physics and Radiation Protection Expert in Hungary. Associate professor at Budapest University of Technology and Economics. Head of Radiation Protection Service at National Institute of Oncology, Hungary. President of the ENEN aisbl. President of Health Physics Section, Roland Eötvös Physical Society. Board member of Hungarian Society of Medical Physics and next president of Hungarian Radiation Oncology Society.

- Reviews from participants -

“ENEN 2023 Nuclear physics. I never thought I would ever engage in that topic. Yet here I am. And I think it was one of the best decisions in my life. I didn't know what to expect; I was excited, but also nervous. All emotions merged into one, happiness. The journey began. After numerous take offs and landings, we finally arrived in Budapest. The program started the next day. Introductory lectures and presentations. I particularly enjoyed talking with different professors and experts. The second day made me much more nervous. Delivering a presentation in a full auditorium haunted me. I spent the whole night practicing my speech until I perfected it. After the presentations were done, everything became easier. Dinner on the Danube and meeting new people will definitely remain as one of the best memories. The presentations and lectures I witnessed were undoubtedly of high quality. Of course, I enjoyed some more than others. I learned a lot of new things, and I am genuinely happy about it. I have to highlight the visit to the National Institute of Oncology. I saw how the machines for treating tumours and other malignant diseases worked on patients. Numerous laboratories and equipment. That day was particularly interesting to me. Along with the engaging and well-organized program, we had to find time to explore beautiful Budapest. Everything came to an end very quickly. The hardest part was saying goodbye. Spending several days with people who share the same interests and goals was wonderful. Moreover, the days filled with various activities passed quickly. Everyone could find something that interested them. I hope such competitions will continue so that other children can have this experience too. I definitely won't easily forget it, and I hope for a reunion in the not-so-distant future.”

- Karla Iva Vuletić



“Dear people of ENEN,

It was a great pleasure to participate in this event and travel to Budapest. It was my first time in Budapest and overall the first time participating in such event. The hotel was really nice and comfortable with a great location as we were close to the sights. The first day was exciting, a completely different atmosphere and surrounding; new people from all across Europe that share the same interest as me and the staff teaching us a lot about nuclear physics. On the following day, we were presenting ourselves and our video which was for me the most challenging part, I had to practice how to present and it was quite stressful, but I got to know the other participants better and learn from their videos as well. The best part of that day was the dinner on the boat, which was a really fun event where I got to see Budapest and hang out with my friends...Wednesday was a busy day, we had a couple of presentations from which I learnt a lot about nuclear reactors and

how they work as well as the importance of nuclear energy. I also got to meet some people and chat with them a bit during the breaks. Thursday was the busiest day for me, we had some lectures about the medical uses of nuclear physics and how it is used for treating diseases. And on Friday, there was a discussion about the whole program, its good parts and some suggestions on what to change next time, the awards were given out and at the end we said goodbye to our new friends we made and then we left Budapest the next day. Overall the whole experience was amazing and unique, I walked a lot every day and got to see Budapest, taste the food, buy souvenirs and see all the sights. I got to meet new people and had a lot of fun with them, though in my opinion there wasn't quite enough time to hang out with them. Nonetheless, I'm looking forward to competing in 2 years again and having fun again as this time.”

- Ivan Marušić



“ENEN 2023 It all began when I decided to make a video about nuclear energy, for a competition set to take place in Budapest. Wanting to test my skills and try something new, I decided to try to be in one of the 15 finalist teams. Unexpectedly, my wish came true. During the 6 days I spent in the Hungarian capital, I made many new friends and memories. Communicating with other like-minded peers from all around Europe was definitely one of the things I liked the most. I enjoyed many activities and lectures during my stay. I found ones about nuclear future and sustainable energy very interesting, but my favourite ones were about usage of nuclear energy in the medical field. I loved our visit to the National institute of Oncology and visiting various facilities on the campus. The competition itself was obviously the most stressful part, but I think that everyone was relieved after the first day, since the competition took place that day. Renowned experts in the field seemed to be really interested in sharing their knowledge with us. Their lectures helped me on my way to finding

my passion for a specific area of study. The competition in Budapest is an unforgettable experience for me that I think of more than just an academic success. It was a great opportunity to meet new friends, learn a lot of new things about nuclear physics, and being one step closer to uncovering who do I want to be and what do I want to do in the future.”

- Pjero Vuletić

“ENEN – Nuclear energy competition; Budapest, 2023. From 3.7. to 7.7. 2023.

I participated in the ENEN 2023. nuclear energy competition in Budapest as part of the Nuclear Citizens team. In total there were 15 teams and every team created a short 3-minute video on the topic of nuclear energy. My partner and I made a video regarding the general negative impression that the word „nuclear“ has and how we can try to change that. The competition lasted 5 days and each day we had lectures about topics related to nuclear physics, such as nuclear medicine, nuclear reactors, why nuclear energy is a very clean energy source and the future of nuclear energy. As part of the program we also socialized with other teams and met new and interesting people. In addition, we were located at the BME university in Budapest where we used interesting (but not dangerous!) equipment for nuclear research. Also, we went inside the facility of a small test nuclear reactor that the university has on its campus. Our hosts also organised a tour of the Hungarian institute for oncology where we interacted with medical physicists and scientists who also showed us all the machines used in cancer research and treatment; we saw

a very interesting robot called the CyberKnife. We also went on a boat ride on the Danube where we had dinner and enjoyed the view around us. When we weren't listening to lectures we also had fun Q&A sessions with the professors, and besides everything academic we also visited the city's many beautiful historical buildings such as the House of parliament. We made friends with many of the other competitors which was also very entertaining. During the evening after our lectures we would always tour the city and explore new buildings and architecture such as all the beautiful bridges. At the end of our competition the jury gave rewards to the best teams, and after that we all slowly started walking to the hotel to pack and go home. All in all, the competition was a very pleasant and entertaining experience for me. The part I enjoyed most was getting to know all the other teams and listening to what they have to say, especially during communal lunches and dinners we talked a lot and had a lot of fun while doing so. I hope to have many more fun experiences such as this one.”

- Tomislav Birimiša



Once we arrived at the airport, Csilla (Dr. Csilla Pesznyak) was waiting for us, and we were very excited to meet her because we had been exchanging emails with her, and we were looking forward to meeting her at the airport. The first team we met was TEAM Tokamak from Italy. We didn't speak much as all of us were tired and wanted to go to the hotel to sleep. However, we had to wait for several other members of the jury to gather and go together to the hotel. This was amusing because initially, we didn't realise they were part of our jury, and the following day at the event, we recognized them and were somewhat shocked because we didn't know them. Once we arrived at the hotel, our main priority was to get some rest.



Monday morning was really productive as we were preparing our presentation for Tuesday. When we finished, we went for a walk and crossed the Danube for the first time (the first of many times). On the other side of the river, we saw the university for the first time and luckily stumbled upon the Lágymányosi ELTE Campus, where we found a marvellous exposition. One of the things that surprised us throughout the trip (and there were several) was that instead of numerous Zebra Crossings

(as we are used to in our country), they were replaced by underground tunnels connecting various points of the street. Later, we returned to the hotel for lunch with other teams, and after that, we all went together to the university for the opening ceremony. There, we received several speeches from collaborating organisations. From my point of view, the one I liked the most was the speech given by the Institute of Nuclear Techniques, as it explained what they do at the Institute and showcased the degrees they offer. Once the ceremony ended, we went on our first walk exploring Budapest in more depth. We started walking after dinner and strolled along the shore of the Danube, where we discovered many interesting things such as the Monument in memory of the Jews killed during WWII, the parliament with its marvellous and breathtaking sunset, several churches and government ministries, as well as the stunning city lights that left us truly impressed.

The following day, **Tuesday**, was the big day—our presentation and those of our teammates. At the beginning, none of us were nervous, but as the 4th group was presenting, we started to feel anxious because we were the 6th group. Then, it was our turn. We went out there and gave it our best. Luckily, after our speech, we had a coffee break, which allowed us to relax a bit and talk with our colleagues. We were also fortunate because when the next team was about to present their project, the projector broke, and they had to bring in another one. After the presentations, the afternoon began with speeches from young people working in the nuclear sector. We were pleasantly surprised to find two Spanish individuals, Paco and Leticia, and immediately during the coffee break, we went to meet and talk with them. Later on, we had the wonderful opportunity to talk with several professors and ask them questions. This activity was amazing, and I really enjoyed it because we could interact closely with the professors. To end the day in an incredible way, we had a boat trip and dinner along the Danube. The views of the parliament, the castle, and other monuments were absolutely breathtaking with all the lighting. Once the boat trip finished, we walked back to our hotel, exploring the streets of Budapest to discover more features of the city.

Wednesday was a day full of very interesting lectures that we really enjoyed. The first one was given by Prof. Ambrosini, who talked about the use of nuclear energy for our planet, mentioning several points such as the production of electricity, green taxonomy, and green energy in Europe, among others. Next, Prof. Gianfranco gave an intriguing lecture about nuclear propulsion for the space sector, discussing topics like nuclear propulsion for rockets and nuclear energy as a potential source on celestial bodies like the moon or Mars. After the coffee break, Prof. Leon talked about the risks and benefits of nuclear energy in a very innovative way. Instead of following the traditional presentation format (introduction, body, conclusion), he started with a series of questions and answered them one by one throughout the presentation, giving us the opportunity to answer them differently as well. The last lecture of the morning was by Chanto Creze, discussing decommissioning and emphasising the importance of properly handling the decommissioning of nuclear power plants for our future. In the afternoon, we had an exciting visit to the BME training reactor, where we learned how it worked and got to see a real reactor. This was an unforgettable experience. We also had the opportunity to practise on a nuclear fission power plant simulator, learning how it operated. Additionally, we measured radiation levels near the university gardens, where we could observe the work of radiation professionals. When the university activities finished, we went to the thermal swimming pools in Varosliget Park, where we had an amazing and unforgettable time. Then, we returned to the hotel, walking through the streets of Budapest.

Thursday was also a very nice day. We started with a lecture closely related to the topic of our video, "Nuclear Fusion: The Energy Source of the Future," given by Gergő Pokol. This lecture allowed us to deepen our knowledge about fusion and how it works. After that, we had another interesting lecture by Gabriel Pavel about CANDU type reactors. Honestly, this was one of the lectures I liked the most because I didn't have prior knowledge about these types of reactors. I learned a lot, and what made it even more engaging was Gabriel's innovative technique of using a pen given to us at the beginning of the campus to explain how the reactor worked. Following that, we had two lectures on Nuclear Medicine and its physical applications. While it was interesting, as this field doesn't particularly interest me, I didn't take advantage of it as much as I did with other lectures. However, I truly enjoyed the visit to the National Institute of Oncology (NIO), where they showed us the machines they used, such as the Cyberknife, and the radiobiology laboratory. After the visit, we went to see Buda Castle, which was near our location, as well as the Fisherman's Bastion and the Citadel of Budapest. All these trips to historical monuments were incredible.

And now, we come to the end—the last day, **Friday**. Making the most of the time available, we woke up early, checked out, and had breakfast. Before the activities began on this final day, we visited the Budapest Central Market. The first activity was a roundtable, where we provided feedback and opinions to the organisers of the event to help them improve for the future. After this, Prof. Leon and Dario Cruz (Fusenet) delivered the final speeches of the campus, and the Awards Ceremony commenced. This day will stay with us forever. Several awards were given to participants, and once the ceremony ended, it was time to say goodbye to everyone and return home.



- Raúl Magallón Ramón

ENEEP Newsletter

The European Nuclear Experimental Educational Platform (ENEEP) is approaching its first educational activities beyond the timeframe of the EU-financed project. Between September and December 2023, the first ENEEP Autumn Reactor Physics Courses will be organized at four ENEEP partner institutions. Three core members, the Slovak University of Technology in Bratislava (STU), the Czech Technical University in Prague (CTU), and the Józef Stefan Institute (JSI) as well as the new member, the University of Pavia (UNIPV), will provide four days intensive hands-on educational activities on the following topics:

- *Advanced Reactor Physics (CTU)*
- *Fundamentals of Isotope production (UNIPV)*
- *Fundamentals of Neutron Detection (JSI)*
- *Workshop on Criticality Safety Calculations (STU)*



The first three courses are already full, but the last free sheets for the Workshop on Criticality Safety Calculations are still vacant. If you are interested, you can apply [HERE](#).



The ENEEP Autumn Reactor Physics Courses will be organized also next year with extended topics in the nuclear fields. In addition, there is a plan to organize the **ENEEP Summer School** jointly at two partner institutions. The participants of the Summer School will complete experimental activities in two laboratories in two different countries. For eligible participants, [ENEN2plus mobility grants](#) will be provided. For more information check out www.eneep.org, follow **#ENEEP** or visit us on [FaceBook](#), [LinkedIN](#), [Twitter](#) and [YouTube](#).



Štefan ČERBA graduated from the Slovak University of Technology in Bratislava (STU) in the degree course nuclear engineering. He worked at the Korea Atomic Energy Research Institute (KAERI) and as an expert advisor for the Slovak Nuclear Regulatory Authority. Currently he works as a senior researcher at STU where he is involved in research activities related to reactor physics, radiation protection, numerical simulations, and nuclear data. He is also involved in the education process through subject such as reactor physics, NPP decommissioning, materials for NPPs and computer network. He is involved and responsible for the implementation of several national and international projects, he is a task leader in ENEN2plus and communication manager in ENEEP. He is also a chairman of the NURECO – Nuclear Research Community civil association and the chairman of the Supervisory Board of the B&J NUCLEAR research spin-off company.

GRE@T-PIONEER Courses

Do you want to learn all the intricacies of computational and experimental reactor physics? The GRE@T PIONEER consortium will reoffer all its courses after the summer at no cost!

The courses are offered as flipped courses, with a preparatory phase delivered online, followed by a week-long set of interactive sessions for each course. Such sessions are offered in a hybrid mode: the participants can attend the sessions either onsite or remotely. A selected number of onsite participants will receive financial support from the ENEN2+ mobility program to cover their travelling and accommodation costs.



The GRE@T-PIONEER consortium gathers 18 university teachers from 8 different countries in 6 different countries. The main goals of the project are:

- To maintain and further develop competences in computational and experimental nuclear reactor physics and safety.
- To deliver top-class courses using state-of-the-art pedagogical methods (active learning through flipping).
- To create a community of reactor physicists.

Visit the project homepage and its registration page!

<https://great-pioneer.eu>



Christophe DEMAZIÈRE is leading the DREAM task force at Chalmers (Deterministic Reactor Modelling). DREAM is a cross-disciplinary group having expertise in neutron transport, fluid dynamics, heat transfer, and numerical methods. The aim of the group is to develop beyond state-of-the-art techniques for modelling nuclear reactors, thus contributing to improved simulations tools and enhanced safety. Prof. Demazière is lecturing in courses on the physics and modelling of nuclear reactors. These courses deal with the multi-physic and multi-scale aspects of such systems. He is a member of the American Nuclear Society.

Winter School on “Nuclear Waste Safety and Management” (Bologna, Italy - 4-8 MARCH, 2024)

The school intends to provide a complete perspective of fundamental aspects of nuclear waste management and disposal solutions and issues ranging from radioprotection to management issues and final disposal. The lectures will also encompass the norms and safety standards in the nuclear field, and the impact of nuclear activities on the environment and the population, including environmental radiation monitoring and risk and safety assessments for both the population and the ecosystem. The objective is to give to the students a right background allowing them to be fully engaged in the training session focused on post-closure safety assessment of nuclear waste disposal facilities.



Starting from the concept of a ‘safety case’ relating to radioactive waste disposal and its constituent parts the training session will cover all aspects of planning and managing nuclear waste and a disposal system. The objective is to provide a walk-through best international practice for post-closure safety assessment, signposting guidance and providing examples. This will include exercises in identifying scenarios and developing associated

conceptual models and hands-on sessions with the AMBER compartment modelling tool. Students will be guided through running calculations, to exploring a model for near-surface disposal including wastes, the engineered facility, geosphere and biosphere, exploring results and making changes to explore scenario, model and parameter uncertainties.



Barbara FERRUCCI is born in 1975. She is currently employed at the FSN - SICNUC - TNMT Laboratory within the ENEA Research Centre in Bologna, Italy. She obtained her Master's degree in Nuclear Engineering in 2005 and a PhD in Nuclear Engineering from Bologna University in 2009. Throughout her doctoral studies, her research centered around the utilization of geographic information system (GIS) software for analysing environmental impacts, as well as simulating radioactive releases and conducting dose assessments. At present, Barbara is actively participating in different projects including a partnership with ENEA and ASI (Italian Space Agency) for the feasibility study of a nuclear fission reactor for the power generation on the Moon surface, the ENEN2Plus project, a EURATOM funded project which seeks to enhance nuclear expertise in Europe by offering continuous education and structured training programs.

Reminder

Scientific Dating – An Encounter Across Disciplines



Research is becoming ever more collaborative and inclusive. This workshop matches you with scientists from different disciplines with the purpose of sharing insights on, and approaches to, research involving nuclear topics. Connect and integrate different perspectives and forms of knowledge, stimulate your critical thinking and explore new ways to develop collaborative projects!

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Course on the Deterministic Modelling of Nuclear Reactor Multi – Physics

SAVE THE DATE!

**11-15 DECEMBER
2023**

**COURSE ON THE DETERMINISTIC MODELLING
OF NUCLEAR REACTOR MULTI-PHYSICS**

Registration will close on October 1st, 2023.
Five onsite participations will be covered by the ENEN2+ mobility fund.

More Information:
Prof. Christophe Demazière
demaz@chalmers.se

More info and registration at: <https://database.enen.eu/index.php/2023/08/31/course-deterministic-modelling-of-nuclear-reactor-multi-physics/>

ENEN# Webinars

ENEN# Webinars on Nuclear Energy managed by the University of Pisa

In the frame of the activities for WP3 of the ENEN# project, the MSc in Nuclear Engineering of the University of Pisa has organised a new series of webinars for the Academic Year 2022-2023. The idea of holding webinars in a sustainable fashion was launched at the end of 2020, in the middle of the Covid-19 pandemic, aiming to provide a forum for exchanging information on matters of interest for Nuclear Engineering.



The first edition was offered in the frame of the ENEN+ project, as a spontaneous initiative that resulted immediately successful for both the willingness of Past-student and Experts to deliver typically one-hour talks on their recent research and relevant findings during Friday afternoons. The combination of Past-student and Experts, often difficult to distinguish among each other because of the high-level discussions proposed by all interventions, was conceived for having a twofold attractiveness

for young students and researchers: past-student show examples of the work being done in the early stages of their careers in the nuclear fields, while experts bring to the audience the live voice of senior researchers and professors from qualified institutions in the nuclear fields.

Two series of webinars were successfully run in academic years [2020-2021](#) and [2021-2022](#), totalling 37 webinars in the first edition and 28 in the second one and covering different aspects of nuclear energy of great interest for the mixed audience composed by students of any level (BSc, MSc and PhD) and by researchers and generally interested persons. Owing to an early decision, the webinars, in fact, were not targeted only to students, being open to a general attendance, aiming to spread nuclear energy culture to the vast public.

For the series of webinars run in the frame of the ENEN# Project in the academic year [2022-2023](#), a few important changes were made in customising the initiative for the specific aims of the project. Firstly, the name of the series was changed to Past-student and Expert Webinars in **Nuclear Energy**, replacing the earlier focus on “Nuclear Engineering”. Actually, also in previous editions general subjects were covered not strictly pertaining to nuclear engineering, but in the latest edition there was a specific need to focus also on “*organising webinars about the novelties (e.g., nuclear safety, medical application, environment, decommissioning, space, etc.) involving the companies and research centres*”. In addition, a general call and personalised invitations to deliver webinars were addressed to all the participants in the project, in order to shift from an initiative mainly conceived and led by the University of Pisa to a common commitment of the ENEN# project. Indeed, the aim of the webinars that, since the very beginning, was to make UniPi offer its availability to create a European centre for dissemination of nuclear culture via Friday afternoon webinars, found its most complete realisation in the ENEN# Project.

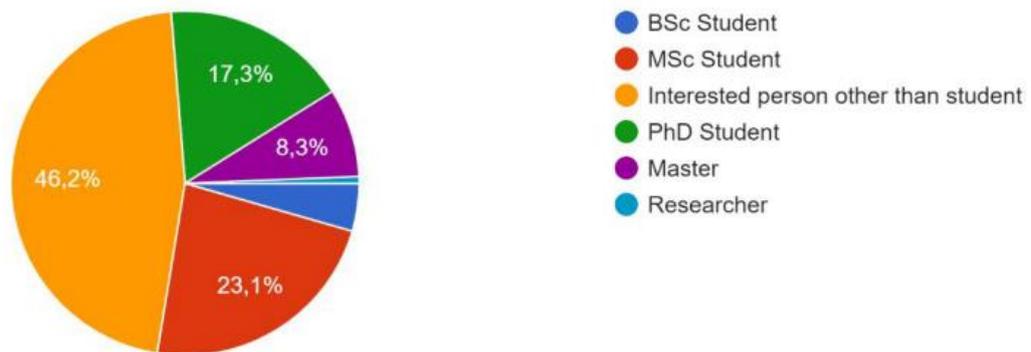
In running the series of webinars of the past academic year, which followed [a successful career event held on December 2nd 2022](#) for celebrating the 80th Anniversary of the first Fermi Pile criticality, the experience gained from the two previous editions was taken into account, reducing the pace of the Friday afternoon webinars, e.g., avoiding as far as possible to deliver multiple webinars in a single day, so that in this edition only 20 webinars were run. In particular, considering that webinars are planned to be delivered also in the next academic years, some of the webinars initially planned for July 2023 were postponed to October – November 2023, to avoid wasting interesting talks in periods of scarce attendance because of vacations. As it can be noted at this [link](#), reporting the list of the

webinars and the CV of the lecturers, the subjects covered were varied; in particular Education and Networking were covered, starting with interesting webinars by the ENEN Staff and by ENS-YGN and WiN, then continuing with more specific subjects related to various researches and applications in nuclear thermal-hydraulics and fuel behaviour, energy policy issues, space applications, nuclear plants recently connected to the electrical grid, multiphase flows, fusion research and engineering, waste management, Generation IV reactors, radiopharmaceuticals, thermal-hydraulic code models and experiments, new research reactors for isotope production, high fidelity CFD calculations, radiological impact of effluents.

The attendance in the webinars was varied, as shown by the categorization of those who requested to be informed about the schedule (see below).

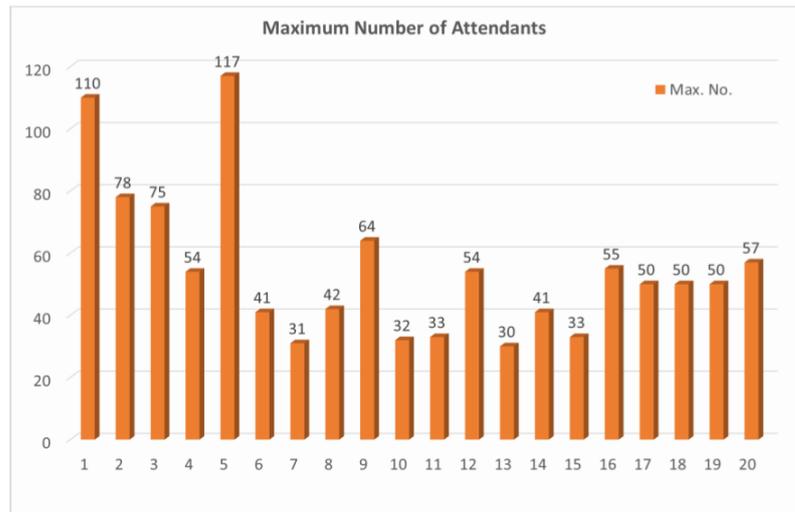
Position

156 risposte



The specific attendance to webinars was measured by the number of people connecting at least once during the talks, broadcasted via MS Teams, and was varied, depending on the period of the year and on the interest in the specific subject (see below). The numerosity of attendants was larger than in previous editions, owing to the spreading of the announcements in the frame of the project. As a further novelty in this series, **the recordings of the webinars is available at the mentioned [link](#)**, thus providing to those who could not attend live for any reason the opportunity to participate in an asynchronous way; the recordings indeed constitute a remarkable library of interesting interventions on various nuclear energy related matters.

The evaluation of the webinars, obtained by inviting the attendants to respond to a detailed questionnaire, showed that they were very well received, also with a large number of very positive free comments, thus encouraging to carry on the initiative. Detailed suggestions for improvements in spreading the announcements and on the subjects to be covered in the future are now being taken into account.



While at the time of writing the new series of webinars already covers all Friday afternoons in next October and November 2023, **we encourage project Participants and anyone willing to contribute to access this [link](#) and propose own subjects** selecting among the still free dates from December 2023 to June 2024.

We wish to express gratitude to all the lecturers who contributed to our initiative, firmly sharing its purposes and contributing to its success, as well as to the numerous attendants who often made very lively the webinars with their questions and remarks. The following collages summarise lecturers and subjects covered, whose details can be found at the already reported [link](#).



Walter AMBROSINI is Full Professor in Nuclear Plants at the University of Pisa, Italy. His Research interests involve the field of Nuclear Reactor Thermal-hydraulics. He has been President of the Research Doctorate in Nuclear Engineering in Pisa (2008-2016), President of the MSc in Nuclear Engineering in Pisa (2011-2018), President of the European Nuclear Education Network (2013-2016), Member of the ASN Commission for Energetics and Nuclear Engineering (2018-2021), Present Member of the CDs of CIRTEN and of the Associazione Italiana Nucleare (AIN). His relevant Memberships: AIN, ENS, ANS, ASME.



European Nuclear Education Network

MISSION The mission of ENEN is the preservation and the further development of expertise in the nuclear fields by higher Education and Training.



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ENEN PhD Event & Prize It is co-sponsored by ENEN, the European Commission Joint Research Centre (JRC), and the organizer of an international conference.



EMSNE Certification The European Master of Science in Nuclear Engineering (EMSNE) is endorsed by all ENEN members.



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- ❖ Dissemination & Communication
- ❖ Exploitation of results
- ❖ International Mobility travel fund



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