



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



ISSUE 01/2023

ENEN# Bulletin

SPRING

Quarterly
Newsletter

Views and opinions expressed are however those of the authors only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the European Commission can be held responsible for them.



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the European Union

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About Us

What is ENEN?

The European Nuclear Education Network, in short ENEN, is an international no-profit association whose mission is “the preservation and the further development of expertise in the nuclear fields by higher Education and Training”. This objective is achieved through the cooperation between universities, research organisations, regulatory bodies, the industry and any other organisations involved in the application of nuclear science and ionising radiation.



You can read more on www.enen.eu

ENEN counts more than 90 members across 3 continents and is currently involved in 15 projects funded by the European Commission.

ENEN2plus project in a nutshell

ENEN2plus is coordinated by ENEN and kicked off in June 2022. It is a very ambitious Euratom collaboration action which aims at building European nuclear competences through continuous advanced and structured education and training actions.

About the ENEN2plus project

The ENEN2plus project started as an initiative which should have taken into consideration two major aspects: supporting the providers of the knowledge and supporting the recipients of the knowledge.

When looking at the first aspect, the Project was based on a previously developed project which looked into designing and implementation of Education and Training actions on various nuclear topics. One recent example of such project can be considered (but not limited to) the ANNETTE (<https://www.annette.eu/>) project which started in 2016 and had its last actions in 2019. During project implementation numerous E&T actions were implemented together with actions aiming at attracting people to the nuclear sector and to reward the efforts made by these young students (e.g. summer schools). While for the second aspect

mentioned above, one it is important to remind: the mobility program developed within the ENENplus project. This mobility scheme proved to be a very successful one. Several factors contributed to its success. It is worth mentioning that the mobility scheme under ENENplus, as the one implemented in ENEN2plus addressed the large audience of nuclearists which needed an upgrade on their skills, knowledge or competences, without being necessarily members of the Consortium. The ENENplus project mobility scheme supported with a 950.000 approximative budget, over 600 people in achieving their career goals.

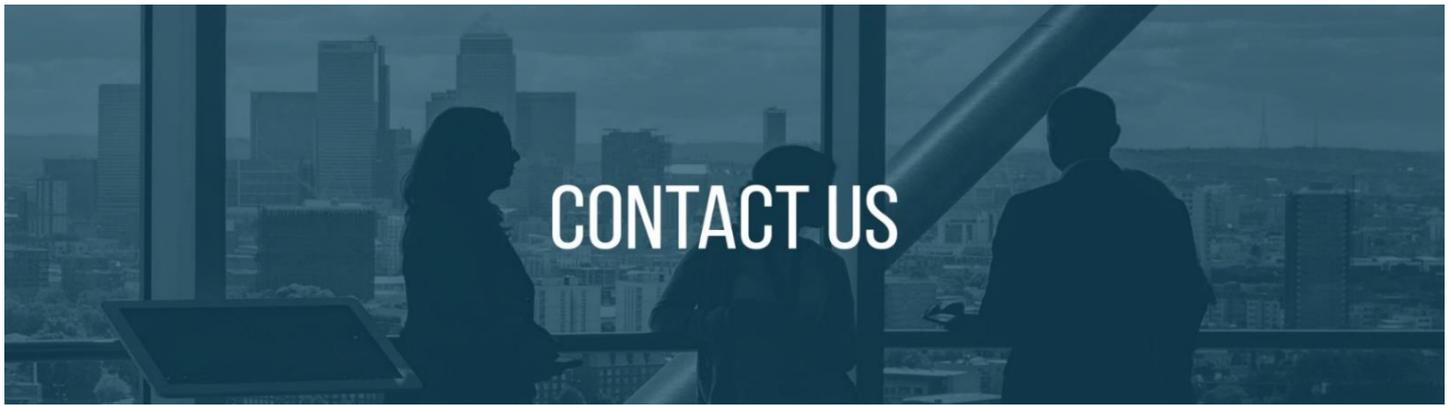
The ENEN2plus project took the ideas of these projects and moved one step forward. We do aim at implementing successful E&T actions but first we need to have a look at what is expected from the whole community. This is the reason we started an investigation spread across the whole nuclear sector. A major importance is attracting people to the nuclear sector. With numerous nuclear power plants to be built in the near period, the pool of nuclear engineers is very limited. Developing a skilled workforce is highly demanded by the energy sector. This is one good example of a nuclear sector where nuclearists are needed but it is not the only sector. Another good example would be the nuclear medicine which developed exponentially in the last decades and specialists in topics like radiation protection are highly required. New topics like use of nuclear in space or small modular reactors are also considered.

Another important section of the project is dedicated to the vocational education. We look further into getting closer to the needs of the industry thus we assigned a full work package to it. We kept the mobility scheme of the ENENplus project but we upgraded it. The new mobility scheme now is implementing a 2.5M EUR program and by the date of this message we have 217 submitted individual applications, with 329 under preparation. We also have 18 submitted group applications for funding with 15 under preparation. We are also aware that some expertise might not be present on the European continent and we also aimed at identifying what and where this expertise could be present. In this sense we have created a whole work package dedicated to the interaction within extra EU partners in order to implement the proper set of E&T actions that could bring that knowledge also on the European Continent.



Gabriel PAVEL

has been Executive Director of the European Nuclear Education Network for two years. He has completed 2 E&T projects and has 6 projects under implementation. Experience: 16y in the nuclear sector. University Politehnica of Bucharest, Romania (16y); Lecturer on nuclear engineering, radiation protection, non-power applications of ionizing radiation. 5 E&T projects and 24 projects with industry.



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.



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.



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.



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.



Enikő KOSZTA is a young Medical Physicist in Hungary She has received her master degree from the University of Technology and Economics, Budapest. She has been working in the National Institute of Oncology in Budapest since 2020. She is a member of the Hungarian Society of Medical Physics, the Hungarian Society for Radiation Oncology and the European Society for Radiation Oncology



Contact Us:
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Focus

ENEN2plus MOBILITY PROGRAM

ENEN2plus comes with the largest mobility action to date in the nuclear education and training field. Two and a half million Euros have been devoted to a strong mobility program devoted to enhance EURATOM competences through mobility opportunities, including access to world-class infrastructure and job perspectives.



The goal is to support 1000 learners with cross-borders and cross-disciplinary mobility within and beyond EU. A comprehensive Mobility Manual has been published [HERE](#) and a dedicated mobility platform has been established [HERE](#).

The Mobility manual outlines the rules and procedures for the applications, evaluations, selections and delivery of the mobility grants within the ENEN2plus project.

The mobility grants are intended primarily for students and early career professionals (up to 10 years of experience), who are aiming to advance the knowledge, skills, experience etc. The grant is intended to enable or improve the nuclear career of the applicant.

- ☑ Both individual and group applications are supported.
- ☑ Recommended individual actions include: internships, on the job trainings, study and/or research exchanges, active participation in a research conference and training courses.
- ☑ Recommended group actions include competitions, workshops, training courses, summer schools, training camps and conferences.

Mobility grants are in principle provided as lump sums directly to the selected applicants and are intended exclusively to cover mobility (transportation and subsistence) costs and access or registration fees.



Leon CIZEL

Head of Reactor Engineering Division, Jožef Stefan Institute, Slovenia. Responsible for the strategic and operational leadership of research, postgraduate education, technical and scientific support to the Slovenian nuclear regulatory body division. Professor of Nuclear Engineering, University of Ljubljana, Slovenia. Past president of the ENEN aisbl. President of the European Nuclear Society

Event Schedule 2023

Belgian Nuclear Careers Day (March 6 - 7, 2023)

The SCK CEN Academy organized the 4th edition of the Belgian Nuclear Careers Day, with the support of the ENEN2Plus project. An in-person event was held in Brussels where about 100 participants heard about possible advanced studies and career opportunities in nuclear industry, healthcare, research centres and governmental organisations. To explore the workflow, technical visits to Westinghouse, ENGIE-Tractebel and the university hospital in Leuven were organized. The in-person event was preceded by online speed dating. 82 participants, a mix of recruiters, students and junior professionals, were able to have 207 meetings in total.



Thank you ENEN, ENS, Thomas Thor, Agoria, FANC, BeIV, NIRAS, EC JRC Geel, The Binding Energy, Rad4Med, ENGIE-Tractebel, Framatome, GE HealthCare and Westinghouse Electric Company for joining us in this event!

ENS Webinar (30th March, 2023)



ENS
Webinar

Discover The Beauty Of Nuclear

Meet experts with passion from NRG

30th March 2023, 1:00pm CET
Online

 ENEN

 Funded by
the European Union

European Nuclear Society

ENYGF KRAKOW
(8-12 MAY, 2023)

*Curious about inspiring opportunities and paths
that the nuclear sector offers in several fields? Join us at ENYGF2023!*

ENYGF
KRAKÓW 2023

European Nuclear Young Generation Forum

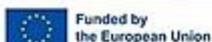
8 - 12 MAY, 2023



17th ENEN PhD Event & Prize
May 10, 2023

at ENYGF conference
Krakow, Poland

ENYGF
KRAKÓW 2023



This event is organized in the frame of the ENEN4Plus project. ENEN4Plus is funded by the European Commission. Views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the European Commission can be held responsible for them.



Don't miss a Nuclear Careers Day rich in workshops, meetings, and networking opportunities. HR professionals from several companies are waiting for meeting you in Krakow!

ENSC
Career Event

Nuclear Careers Day at ENYGF

ENEN2Plus Project
11th May 2023

ENYGF 2023, Krakow, Poland

Funded by the European Union

European Nuclear Society

Programme

- 10:00am** Welcome to Nuclear Careers Day
- 10:30 - 12:30am** Speed Dating with Companies & Recruiters
- 11:30am - 1:00pm** Workshop I "How to start in a new country?"
- 1:00 - 2:00 pm** Walking Lunch & Networking Opportunities
- 2:00 - 4:00 pm** Workshop II "It is not always about climbing the ladder – Career hints from recruiters"

Register here: www.conftool.net/enygf2023



3rd European Nuclear Competition for Secondary Schools

3rd EUROPEAN NUCLEAR COMPETITION FOR SECONDARY SCHOOLS

3-7 July 2023



Venue

Budapest University of Technology and Economics (Budapest, Hungary)

Competitors

Pupils currently enrolled in secondary schools in European States and their teachers. Each team consists of two pupils and one teacher.

Task

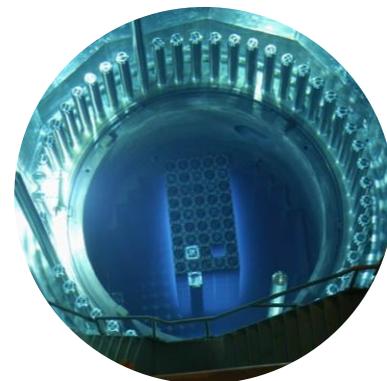
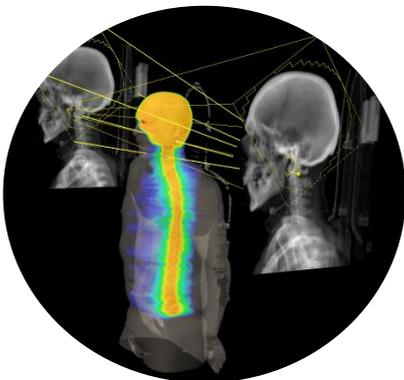
Compose a 3-minute video related to nuclear science (e.g. nuclear energy, radiation protection, medical application, radioactive waste, etc.)

Awards

A total amount of 7500 EUR will be granted at the competition. Nuclear science camp for finalists of the video competition.

**Nomination of 15 finalist teams
10 May 2023**

**Video submission deadline
17 April 2023**



Registration and video upload via [website](#)

Contact nuclear.competition@reak.bem.hu

50 videos were submitted from 12 countries - Ukraine, Italy, Spain, Belgium, Romania, Bulgaria, Sweden, Poland, Croatia, Czech Republic, Portugal, Hungary

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!

WORKSHOP

SCIENTIFIC DATING AN ENCOUNTER ACROSS DISCIPLINES

05/10/2023 - 06/10/2023

BRUSSELS, BELGIUM

Are you a MSc or PhD student in natural or social sciences?
Do you have an interest in nuclear science and technology?
Do you enjoy breaking barriers by collaborating across disciplines?



SEND US A MOTIVATION LETTER
INCLUDING A SHORT CV TO

ACADEMY@SCKCEN.BE

DEADLINE - MAY 31, 2023

During two days, participants will:

- Debate about the opportunities and challenges of working across disciplines and with various stakeholders
- Formulate a research problem in a transdisciplinary perspective
- Identify stakeholders and their potential role in the research process
- Explore ways to collaborate outside your own discipline
- Practice how to present your research to a wider audience

Participants will work in small groups on a selected topic of choice, Small Modular Reactors (SMRs), Reuse of NORM (Naturally Occurring Radioactive Materials) residues resulting from industrial processes, Management of nuclear emergencies and post-accident recovery, Management of high-level radioactive waste, Medical applications: mammography screening. More information about the topics will be provided prior to the workshop.

This workshop brings together MSc students, PhD students and junior researchers from natural and social science disciplines with an interest in nuclear science. The aim of the two-day workshop is to stimulate reflection on research topics and practices across disciplinary boundaries in ways that are often overlooked in the training of young researchers. The programme uses a highly interactive approach that stimulates both individual and mutual learning.

This workshop is organised by the SCK CEN Academy in collaboration with SCK CEN's Programme for Integration of Social and Ethical Aspects into Nuclear Research, under the framework of the European Union's Horizon 2020 research and innovation programme under grant agreement 101061677 (**ENEN2plus**). Participation is free of charge, but submission of a duly completed application file is mandatory (see registration info). A joint accommodation plan for all participants will be provided. More information will be available soon.

Contact:

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Mr Jakob Luyten

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Jakob LUYTEN

has a teaching degree and a MSc in Chemistry from Catholic University of Leuven. He worked at the Avans University of Applied Science as a lecturer and within the L&D group of Sanofi Geel as site training specialist. He recently joined the SCK CEN Academy.

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 to the course will open after the summer.
Five onsite participations will be covered by the ENEN2+ mobility fund.

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

A course on the deterministic modelling of nuclear reactor multi-physics is organized by Chalmers University of Technology at the end of 2023. The course deals with the modelling of nuclear reactors, with emphasis on their multi-physics and multi-scale aspects. The course covers neutron transport, fluid dynamics and heat transfer. This course aims at presenting the main algorithms in the computer codes used by the industry and in academia for the macroscopic modelling of nuclear systems. The underlying

methods used in such codes, together with their assumptions and limitations, are thoroughly presented, so that the codes could be used with confidence.



Registration to the course will open after the summer. Five onsite participations will be covered by the ENEN2+ mobility fund.



The course is made of two parts: a self-paced learning phase representing about 40 hours of work, followed by an interactive week between December 11-15, 2023, also representing about 40 hours of work. The interactive week is organized in a hybrid set-up (participants can join onsite at Chalmers University of Technology, Gothenburg, Sweden or join online).

Whereas the self-paced learning phase focuses on acquiring the theoretical concepts and testing the participant's understanding, the interactive week focuses on hands-on exercises, during which the

participants will apply the learned concepts to the modelling of nuclear reactor systems via hands-on exercises.

For more information, contact Prof. Christophe Demazière demaz@chalmers.se



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.

Upcoming Webinars

WEBINAR	EVENT NAME	
THE UNIVERSITY OF PISA	The ENEN# Weekly Afternoon Webinars. Every Friday!	The program of the webinars planned for this year is available at this link . At the time of writing, the first webinars have been already held, starting with February 2023; anyway, a sufficiently long list is still available, with the webinars being delivered on Friday afternoons.

THE UNIVERSITY OF PISA, MEMBER OF CIRTEN, THE CONSORTIUM OF THE ITALIAN UNIVERSITIES INVOLVED IN RESEARCH AND EDUCATION IN THE NUCLEAR FIELDS...



...www.cirten.it, is holding Past-student and Expert Webinars in Nuclear Science and Engineering since early in 2021. At that time, it was felt necessary to find a way to compensate for the loss of scientifically relevant connections owing to the pandemic, thus restoring by the available means the possibility to disseminate knowledge in the nuclear fields, and to have virtually the same experience of a live event. Two series of webinars were held on different nuclear matters, in the academic years [2020-2021](#) and [2021-2022](#), obtaining good success, owing to the quality of the delivered lectures that stimulated attendance and interaction among the attendees.

In the frame of the **ENEN# Project**, the initiative has been included in WP3 with the new name of “**Past-student and Expert Webinars in Nuclear Energy**”, aiming to constitute a further enlarged forum, with the contribution of all the project partners. The format of “past-student and expert webinars” is aimed to highlight the work in progress by the youngest who, a few years ago, were sitting in the desks of our universities, together with the relevant messages coming from senior researchers and professionals, obtaining a quite interesting mix of ages and

levels of experience which provides a rather complete panorama of what is presently ongoing in the nuclear fields. Besides the general subjects already covered in past editions, attention is now devoted to including also “novelties” (e.g., nuclear safety, medical applications, environment, decommissioning, space, etc.), thus covering a broader range of interests. ENEN# Project partners and any qualified Institution can propose to deliver lectures in the benefit of a vast audience of university students at any level and of the general public throughout Europe and abroad.

Please, use this [link](#) to reserve for being informed weekly by e-mail about the webinars and send a message to walter.ambrosini@unipi.it and rosa.lofrano@unipi.it for proposing new webinars.

List of webinars for this year

10 February 2023 15:00	Gabriel PAVEL, Roberta CIRILLO ENEN, Belgium Supporting career paths in the nuclear fields > Recording Available
17 February 2023 15:00	Jadwiga NAJDER_and Patricia SCHINDLER ENS-YGN and Women in Nuclear Climate science, solutions and action: nuclear technologies in support of UN Sustainable Development Goals > Recording Available
24 February 2023 15:00	Alessandro PETRUZZI NINE, Italy NINE R&D projects > Recording Available
03 March 2023	General Assembly of ENEN
10 March 2023 15:00	David NOVOG McMaster University, Canada The Silver Bullet Syndrome: Action and Inaction on Low Carbon Energy > Recording Available
17 March 2023 15:00	Daniel FREIS JRC Karlsruhe, Germany Radioisotope Power Systems for Exploratory Space Missions > Recording Available
24 March 2023 14:30	Juha POIKOLA TVO, Finland Olkiluoto 3 - The greatest single act for the climate in Finland > Recording Available
24 March 2023 16:00	Bogdan BUHAI Framatome GmbH, Germany SIMULATORS FOR VALIDATION AND OPERATOR TRAINING > Recording Available
31 March 2023 15:00	Mark ANDERSON University of Wisconsin UNDERSTANDING MULTIPHASE FLOW TO ADVANCE NUCLEAR ENERGY GENERATION > Recording Available
07 April 2023	Merry Easter Vacations!
14 April 2023 15:00	Donato LIOCE ITER ORGANIZATION The ITER Tokamak Cooling Water System > Recording Available
21 April 2023 15:00	Sergio CIATTAGLIA EUROFUSION FUSION POWER PLANT COMPLEXITY AND MAIN POTENTIAL ISSUES > Recording Available
21 April 2023 16:30	Johanna HANSEN Posiva, Finland Spent Nuclear Fuel Management in Finland > Recording Available

28 April 2023 15:00	Mariano TARANTINO ENEA - Italy LFRs Overview Worldwide > Recording Available
05 May 2023 16:00	Alice D'ONOFRIO C2TN - Portugal Radiopharmaceuticals: How to Exploit Radioactivity for Health Applications
12 May 2023 15:00	Armando NAVA Canadian Nuclear Laboratories Fuel Bundle/Assembly Design using Subchannel Analysis
19 May 2023 15:00	Carlo PARISI Idaho National Laboratory - USA Primary Coolant Apparatus Test (PCAT): an Experimental Facility for MARVEL Microreactor
26 May 2023 15:30	Ronald SCHRAM NRG Pallas The PALLAS reactor for future medical isotope production and energy research
02 June 2023	National Holiday in Italy
09 June 2023 15:00	Shuisheng HE University of Sheffield - UK TBD
16 June 2023 15:00	Mariano TARANTINO ENEA - Italy Space Nuclear Reactors: Status & Perspectives
23 June 2023 15:00	Govert de WITH NRG PALLAS Radiological impact of contaminated seawater near Fukushima
30 June 2023 15:00	Sergio ORLANDI ITER ORGANIZATION Lesson Learned on ITER Assembly and Installation
07 July 2023 15:00	Andrea ALFONSI Ultra Safe Nuclear - USNC USNC for space applications: From RTG to Nuclear propulsion systems
14 July 2023 14:00	Gianfranco CARUSO Sapienza Università di Roma Nuclear Desalination



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.



APPLY.ENEN Platform To apply for education and training courses.



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.



ENEN Newsletter A quarterly publication with regular updates about projects ENEN is involved in, news, partners initiatives, etc.



PROJECTS PORTFOLIO ENEN manages European Commission funded projects both as Coordinator and as Consortium Partner. Main activities include:

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



Members of ENEN

- Universities,
- Research organizations,
- Regulatory bodies,
- Nuclear industry

ENEN welcomes as well, International Members and Partners.



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