GREAT-PIONEER project kick-off

The EU-funded Horizon 2020 project, GREAT-PIONEER held its kick-off meeting on the 5 - 6 November 2020. For three years, this project will bring together 10 partners from 8 European countries and will be coordinated by Chalmers University of Technology (Sweden).

The consortium will develop specialised education and training resources for post-graduate students in nuclear physics and nuclear reactor safety.

European countries face a challenging situation regarding the education and training of personnel required for the safe operation of the nuclear plants. Each country's situation and view of nuclear power is different, from countries focusing on decommissioning old plants to those exploring the possibility of further investing in nuclear. Countries need additional resources in all levels of education and training to guarantee the safe operation of new and existing nuclear units. Low recruitment and high retirement levels in the nuclear sector mean that constructing new nuclear plants **requires many graduates with nuclear engineering training on a very short term**. Attracting new students is increasingly difficult so actions must be taken to strengthen the European graduate nuclear engineering education network and **offer new, attractive and accessible training resources.**

"This project represents a fantastic opportunity to build a long-lasting educational package in advanced computational reactor physics and nuclear safety, to be offered not only during the project, but also after its completion. Moreover, using innovative pedagogical methods, student learning will be at the heart of all course materials being developed."

says the project's coordinator, **Christophe Demazière** from **Chalmers.**

The topics covered in GREAT-PIONEER will allow the students to fully comprehend all the methods and corresponding calculations used for modelling the behaviour of nuclear reactor cores, from the generation of nuclear cross-sections to the response of a reactor during a transient. The course modules will contain specifically designed interactive sessions during which the various teachers will closely interact with the students in order to support them in their learning. Most of the preparatory course elements will be delivered on-line and the students will have the possibility to follow the interactive sessions either on-site or remotely on the web. **By following the courses and hands-on training sessions, the students will be able to perform nuclear reactor safety simulations and understand all the calculations on which such simulations rely.**

GREAT-PIONEER aims to:

- **Use innovative pedagogical methods, such as "flipped classroom", blended and active learning**
- **Deliver active learning programming and using computer-based and hands-on exercises**

PROJECT DETAILS

Project Name: GRADUATE EDUCATION ALLIANCE FOR TEACHING THE PHYSICS AND SAFETY OF NUCLEAR REACTORS

Project No: 890675

Start Date: 01/11/2020

Project Duration: 36 months

Project partners:

- Chalmers University of Technology (**Chalmers**),
- Ecole Polytechnique Federale De Lausanne (**EPFL**),
- Technische Universität München (**TUM**),
- Technische Universität Dresden (**TUD**),
- Budapesti Műszaki És Gazdaságtudományi Egyetem (**BME**),
- Politecnico di Torino (**POLITO**),
- Universidad Politécnica de Madrid (**UPM**),
- Universitat Politècnica de València (**UPV**),
- European Nuclear Education Network (**ENEN**),
- LGI Consulting (**LGI**)

Acknowledgement: This project has received funding from the Euratom research and training programme 2014-2018 under grant agreement N° 890675.

- **Facilitate teachers working together to create coherent and complementary courses**
- **Create condensed modules organised in such a way as to "tell a story"**

To start the project, the kick-off meeting was held on the 5 - 6 of November in an online event attended by around 30 participants. The consortium presented themselves, discussed the actions to be taken over the next 3 years of the project and got to know each other a little better! The partners are excited to take the next steps in the project and begin achieving GREAT PIONEER's key objectives:

Key Objectives:

1. Securing the availability of competence, knowledge and skills at the graduate level in reactor physics and nuclear reactor safety.
2. Teaching reactor physics and nuclear reactor safety using new pedagogical methods relying on flipped classroom and blended learning in general.
3. Teaching reactor physics and nuclear reactor safety using distant learning techniques facilities as much as possible, thus making it possible to offer the courses to any student.
4. Fully integrate hands-on training exercises in the educational resources, using the research and training infrastructures of the partners.
5. Creating a set of coherent courses where the teachers bring their respective expertise.
6. Offering short period courses, so that they also fit attendees from the industry, without compromising a deep learning approach to the covered topics.
7. Investigating the conditions to make the alliance sustainable on the long run.

Get in touch and find out more:

Visit the official website: **www.great-pioneer.eu**

Follow us on **LinkedIn** and **Twitter**

EU CORDIS web page: **https://cordis.europa.eu/project/id/890675**

*If you would like to participate in the End User Group (to provide guidance on the course modules being developed) or the Advisory Board (to assess the quality of the courses being developed), please contact Christophe Demazière at **demaz@chalmers.se***