Education, Training and Research for Innovative Reactors and SMRs

CIRTEN – the Italian nuclear universities

- CIRTEN is the Consortium of the Italian Universities involved in nuclear science and technology research activities, and where educational programmes (MSc, PhD) on nuclear engineering are offered to the young generations.
- CIRTEN has been founded in 1994, joining the competences and the history of Universities active in the nuclear engineering area since the early ’50s.
- In the land of Enrico Fermi, researchers, professors and young students are working together to renovate and to transfer knowledge on nuclear technology and its applications.

65 permanent staff professors
more than 70 young researchers (PhD, research assistants)
more than 150 new students/year (MSc + PhD programmes)

CIRTEN is a proud Founding Member of ENEN Association, the European Nuclear Education Network, and of the World Nuclear University.
CIRTEN is active in international R&D projects, through its competence areas

- **Nuclear safety**
- **Decommissioning, nuclear waste management** and environmental remediation
- **Innovation and technology development of nuclear fission** (GenIII, GenIV, SMRs) and fusion reactors
- **Nuclear fuel and fuel cycle**
- **Radiation protection**
- **Radiation measurement** and instrumentation
- **Medical and industrial applications** of ionising radiations

Nuclear Engineering educational activities are carried out in all CIRTEN Universities

Higher Education offer (english taught programmes):

- MSc in Nuclear Engineering
  - or
- MSc in Energy Eng.
  - (with Nuclear Eng. courses)

- PhD in Nuclear Science & Technology
  - or
- PhD in Energy
  - (with PhD Eng. R&D)
R&D activities for **Lead-cooled Fast Reactors**
- Partner of FALCON consortium for the development of ALFRED reactor
- Participation to Euratom projects and GIF-GenIV activities, experience on Accelerator Driver Systems

R&D activities for **Small Modular Reactors**
- Key partner of the IRIS project
- Developer of SMR (integral PWR) concepts
- Research activities performed for EU SMR concepts (FlexBlue, F-SMR, ELSMOR project)
- Collaborating with IAEA in SMR initiatives

**CIR TEN and new generation reactors**

**CIR TEN education, training and research**

- MSc and PhD students and young Post-Doc researchers, from Italy, Europe and other Continents, involved in modelling and experimental R&D activities
- **International Summer Schools** organised and hosted in CIR TEN Universities
- **Innovative educational tools (e.g. Massive On-Line Open Courses-MOOC)** and on-site **visits**

*IAEA GC-63 in coordination with*

**IAEA**

The Permanent Mission of Italy to the International Organizations in Vienna

**ENEA**

Italian national agency for new technologies, energy and sustainable economic development

**www.cirten.it**

**Nuclear Technology Applications in Italy: From the Past to the Future**