

6 PhD. positions in nuclear analysis of ITER & DONES

UNED treasures a world-class renowned research team in the field of nuclear analysis for the design of nuclear fusion devices, with a long track of participation in ITER, JET, LiPAC, IFMIF, DONES and XCIMER among others.

6 funded predoctoral positions are offered. They all cover topics of radiation fields forecasting for analysis & design of ITER and DONES with direct involvement in the projects, complemented with methodological advances such as:

- Unstructured mesh-based capabilities for CAD-to-MCNP conversion;
- Development of a tool to define radiation sources from beam dynamics sims;
- Acceleration of MCNP simulations through routines and geometry optimization;
- Coupled computational fluid-dynamics & activation phenomena for water additives and other fluids;
- Artificial intelligence-based source bias to accelerate MCNP simulations;
- Development of ACAB code to predict time evolution of radioactive inventory.

Where: ETSII – UNED, Campus Ciudad Universitaria de Madrid

Profile: Master or degree in Physics, Energy Engineering and similar

Appreciated: knowledge of MCNP, expertise in FORTRAN, C, C++ and python, ODE solvers, machine learning & neural networks, high level of English

Salary: FPI grant for 4 years + 3 months internship + 2 conferences + publication fees

Contact: rjuarez@ind.uned.es

Deadlines: 15th July 2025

TECF3IR research group: <http://tecfir.uned.es>

Recent recognitions of the TECF3IR research team:

- Best PhD in nuclear fusion by Sociedad Nuclear Española (2020)
- 2nd SOFT innovation prize by European Commission (2022)
- Miya-Abdou award (2023)
- Hosting of the 15th ITER Neutronics meeting (2025)