Call for applications

PhD position

This PhD position is the result of the cooperation between Politecnico di Milano (POLIMI) and European Commission's Joint Research Centre (JRC) in the frame of the Collaborative Doctoral Partnership (CDP) Agreement in the field of Nuclear Decommissioning and Waste Management (https://ec.europa.eu/jrc/en/working-with-us/collaborative-doctoral-partnerships, https://ec.europa.eu/jrc/sites/jrcsh/files/cdp-nuclear-decommissioning-waste_en.pdf).
The doctoral student will spend a three-years period both at POLIMI and at JRC site of Ispra to attend preparatory courses and research activities for carrying out the research project. The time period spent at JRC will be at maximum two years and it depends on the agreement with the university. For that period, the candidate will have a Category 20 Grantholder contract offered by the JRC (https://ec.europa.eu/jrc/en/working-with-us/jobs/temporary-positions/grantholders) and the salary will be about Euro 26400 per year, depending on certain facts like family status. The period spent at POLIMI will be granted by a POLIMI research fellowship. The amount of the temporary research fellowship will be about Euro 19367 per year.

PhD Programme @ POLIMI:
STEN - ENERGY AND NUCLEAR SCIENCE AND TECHNOLOGY
The candidate will be enrolled in the XXXV Cycle of the PhD programme on Energy And Nuclear Science And Technology according to the regulations of this PhD programme (http://www.dottorato.polimi.it/fileadmin/user_upload/schede_corsi/ENERGNUCL/PF_35-STEN.pdf).

Research field:
NUCLEAR DECOMMISSIONING AND NUCLEAR WASTE MANAGEMENT, RADIOCHEMISTRY AND RADIATION CHEMISTRY

Job locations:

Politecnico di Milano - Energy Department - Nuclear Engineering Division
Radiochemistry and Radiation Chemistry Labs
via La Masa 34 - Building B-18
20156 Milano

European Commission - Joint Research Centre site of Ispra
Laboratory for Radioactivity Measurements (LMR)
Via Enrico Fermi, 2749
21027 Ispra (VA) Italy

PhD duration: 3 years

The PhD Programme is delivered in English.
The student will be directed by a POLIMI Supervisor and POLIMI-JRC research staff.
After successfully completing the whole PhD programme requirements, including the successful defence of the PhD Thesis, the candidate will get the STEN Doctoral Degree by POLIMI.

Admission

This call is open to Italian and foreign citizens holding a degree diploma achieved in the education system prior to Italian Ministerial Decree dated 3.11.1999 no. 509, or a Specialist degree achieved in accordance with Italian Ministerial Decree dated 3.11.1999 no. 509, or a Master of Science degree achieved in accordance with Italian Ministerial Decree dated 22.10.2004 no. 270, or an equivalent academic qualification achieved abroad, comparable in duration and content to the above Italian qualifications and approved in advance by the evaluation committee. The degree will have to be completed and delivered before the beginning of the PhD.

The following criteria will have to be considered in the selection of the candidates.

- The working languages are English and Italian. C2-level will be required in at least one of the two languages for interacting with JRC staff. Capability to draft scientific documentation requires a minimum of B2 level in English.
- Depending on the project topic, the work might be executed in laboratories located in controlled areas. This implies a radiological monitoring of workers. Moreover law forbids work in controlled areas to pregnant women and people in special health situations.
- The candidate shall have MSc degree in a specialisation relevant to the research topic, which could include nuclear engineering, chemistry or equivalent.
- The candidate should have a basic knowledge in nuclear chemistry and radiochemistry, general knowledge on nuclear plants, nuclear fuel cycle and hydrometallurgical reprocessing.
- Other skills might be required depending on the specific topic of the various PhD projects. This might include: radioanalytical chemistry, radiochemical separation, isotopic analysis, radiometric measurements, nuclear materials and others.

PhD research topic

The PhD research topic will be coherent with the research lines included in the POLIMI PhD programme on ENERGY AND NUCLEAR SCIENCE AND TECHNOLOGY and the JRC mission.

The research will aim at developing reliable and innovative methods for radiochemical separation and characterization of the so-called Hard To Detect radionuclides in different matrices coming from the decommissioning of nuclear facilities. In particular, physico-chemical procedures will be drawn up in order to separate radionuclides of interest from different matrices deriving from decommissioning of nuclear facilities or environmental monitoring, answering to a real need of

radiochemical laboratories. In particular, suitable physico-chemical procedures will be drawn up in order to separate radionuclides of interest from the matrix. The purification step of each fraction from interfering radionuclides will be developed as well, thus guarantying reliable, precise and accurate measures.

The project will increase the analytical capabilities of both LMR lab, that already provides analytical activities to the JRC nuclear decommissioning programme, and POLIMI Radio- & Radiation-Chemistry lab, that has already performed radiochemical characterizations and studies on environmental samples and food matrices of interest in NPP (Nuclear Power Plants) monitoring activities, as well as on matrices from decommissioning of nuclear research reactor and others contaminated by TENORM from petrochemical industry. Besides, the research group of the Radio- & Radiation- Chemistry lab is currently involved in the pre-decommissioning activities of the POLIMI nuclear research reactor L-54M and in the IAEA GRAPA project focused on irradiated graphite decommissioning processing approaches.

Application

The application for admission to the selection procedure must be sent only through the application "Application form">"Selection procedures", available in the online services of Politecnico di Milano.

To access this application, the candidate must first register and enter his/her personal data by following the instructions at the link: www.polimi.it/servizionline.

All the applications must be received no later than Midday (12.00 Italian time) on 11th October 2019, otherwise they will be considered inadmissible.

The application must be accompanied by the following documents included as attachments (in a single PDF file):

1. Master´s degree and official academic record
2. CV, describing the relevant research and professional experience and other qualifications held by the applicant, complete with e-mail address, telephone number and any Skype contact details;
3. Motivation Letter (max half a page);
4. up to 2 names of referees, complete with their e-mail address, telephone number and any Skype contact details;
5. Scientific report describing a possible research project in the area of the PhD research topic (max two pages);
6. Scientific publications;

Selection procedure

The doctoral student will be selected according to the following procedure:

1) publication of a call for expression of interest
2) pre-selection by POLIMI STEN PhD Commission
3) selection by the JRC-Ispra

The pre-selection is carried out by a specialized Commission appointed by POLIMI STEN PhD Faculty Board. The Commission consists of three components chosen among professors and researchers with research experience on the topics subject of the call, guaranteeing, as a rule, adequate gender representation. The Commission proceeds to the evaluation of the pdf document submitted by the candidates, aimed at assessing the candidate's aptitude for the research object. The resulting ranking list (a maximum of 5 candidates) will be sent to the JRC specialized Commission, with the candidate application, for the final selection. The JRC Commission will consist of three members appointed by the Head of Unit Decommissioning. The JRC Commission might contact the pre-selected candidates for an interview. The ranking list of the winner candidates will be published on the POLIMI PhD School web site (http://www.dottorato.polimi.it). The publication on the Web site counts as official notification to candidates pursuant to the law.
After the publication of the final ranking list, the winner candidate will be contacted by a PhD School officer for the enrollment procedure.