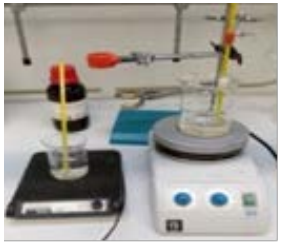
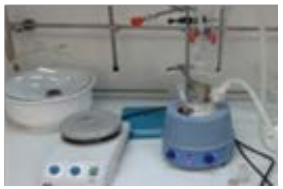
TARGET GROUP

This training course aims at delivering the basics of chemical dosimetry to trainees with a background in Chemistry and Chemical-Nuclear Engineering with the need to extent their theoretical and practical skills in the chemical dosimetry field.



OBJECTIVES

The course provides fundamental theoretical knowledge of dosimetry and chemical dosimetry for both industrial and medical applications. The experimental hands-on training provides the basic practical skills for preparation, irradiation and analysis of chemical dosimeters and gel dosimeters.

INTEGRATED NUCLEAR LABORATORIES - CeSNEF
DEPARTMENT OF ENERGY
RADIOCHEMISTRY AND RADIATION CHEMISTRY LABORATORIES
B18 building - Via La Masa, 34 Milano – Italy
www.polimi.it

MEET-CINCH Consortium

A Modular European Education and Training Concept In Nuclear and Radio CHemistry

meet cinch

http://www.cinch-project.eu

MEET-CINCH is a HORIZON 2020 EU Framework Program project aiming to improve and evolve nuclear chemistry education and training in Europe.

The project closely collaborates with the European Network on Nuclear Chemistry Education and Training aiming to shift the education and training in nuclear chemistry to a new level.

POLITECNICO MILANO 1863
DEPARTMENT OF ENERGY

meet cinch

HANDS-ON TRAINING ON CHEMICAL DOSIMETRY

Milano
3-5 July 2019

Funded by the Horizon 2020 Framework Programme of the European Union

ORGANIZATION

The course is organized by the MEET-CINCH Consortium and it consists of a theoretical part on fundamentals of Chemical Dosimetry, which will be delivered through distance learning via CINCH Moodle (see and sign up at moodle.cinch-project.eu).
The following practical Hands-on training will take place at the Radiochemistry and Radiation Chemistry laboratories at Politecnico di Milano.
All teaching will be in English.

LOCATION

Politecnico di Milano - Department of Energy
Radiochemistry and Radiation Chemistry Laboratories, Building B18 - Via La Masa, 34 Milano

REGISTRATION

For detailed information, please visit the MEET-CINCH web page to download the application form (www.cinch-project.eu/events/courses/).
Send the filled-in form to Elena Macerata (elena.macerata@polimi.it).
No course fee will be charged to the participants and a small budget exists to support a limited number of participants.
Application deadline is 15 May, 2019.

TRAVEL INFORMATIONS

http://www.milanomalpensa-airport.com
http://www.trenord.it/en/timetable/timetable.aspx
https://maps.polimi.it/maps/

e-learning course
FUNDAMENTALS ON CHEMICAL DOSIMETRY

- Introduction on Dosimetry: role and need
- Basics of Absorbed dose and Radiation Exposure: example of exposure in real life
- Dosimeters
  - General principles and features required
  - Overview on dosimeters and applications
- Chemical dosimetry
  - General principles
  - Radiolysis in solid and liquid
  - Radiolytic yields and correlation with dose
  - Overview on chemical dosimeters for medical and industrial applications
- Self Assessment/Assessment

The on-line part will be made available to the participants at moodle.cinch-project.eu.
Participants have to successfully finish this course before entering the on-site course.

PRACTICAL SESSION
3-5 July 2019

Hands-on experience of using chemical dosimeters

Laboratory chemical preparation of:

- Fricke standard dosimeter
- Fricke gel dosimeter

Optical 1D and 2D analysis of:

- FAS dosimeter for industrial application
- GafChromic films for medical application
- Fricke standard dosimeters and Fricke gel dosimeters
- Polymer gel dosimeters

Data analysis:

- Calculation of the radiolytic yield and molar extinction coefficient
- Use of ImageJ Open Software for image analysis
- Calibration curve acquisitions
- Evaluation of unknown dose
- Evaluation of the diffusion process of Fricke gel dosimeter
- Evaluation of isodose curves of a clinical treatment plan using GafChromic films

Practical sessions will be introduced by short theoretical presentations.

Technical tour at the National Centre of Oncological Hadrontherapy

https://fondazionecnao.it/it/