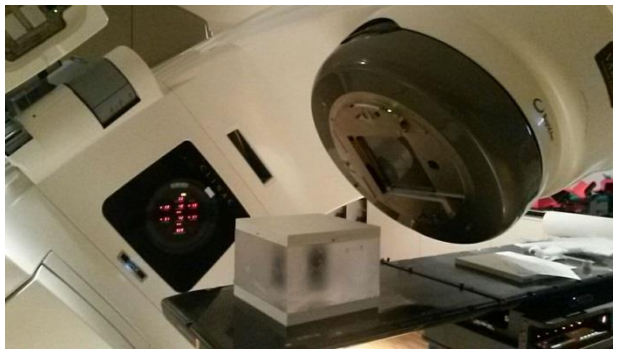
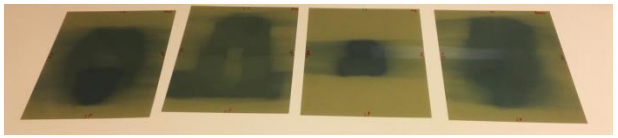
TARGET GROUP

This training course aims at students with a background knowledge in Chemistry, Nuclear Physics and Medical Physics, interested in extending their theoretical and practical skills in the chemical dosimetry and gel dosimetry field, in particular for medical applications.





OBJECTIVES

The course provides fundamental theoretical knowledge of chemical dosimetry and gel dosimeters for medical applications. The experimental hands-on training provides the basic practical skills for preparation, irradiation and analysis (0D, 2D and, partially, 3D) 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

Augmented cooperation in education and training In nuclear and radiochemistry

AUGMENTED CINCH

http://www.cinch-project.eu

A-CINCH is a HORIZON 2020 EU Framework Program project that primarily addresses the young generation's loss of interest for nuclear knowledge by focusing on secondary education, using a "Learn through Play" concept to engage with students and teachers.

POLITECNICO MILANO 1863

DEPARTMENT OF ENERGY

AUGMENTED CINCH

SECOND EDITION

HANDS-ON TRAINING

ON

CHEMICAL DOSIMETRY

Milano

14 – 17 September 2021

"This project has received funding from the Euratom research and training programme 2019-2020 under the grant agreement No. 945301"

ORGANIZATION

The course is organized by the A-CINCH Consortium and it consists of a theoretical part on fundamentals of Chemical Dosimetry and Gel Dosimetry, which will be delivered through distance learning via CINCH Moodle.
The Hands-on training provides the basic practical skills for preparation, irradiation and analysis (0D, 2D and, partially, 3D) of chemical dosimeters and gel dosimeters. 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 and to download the application form, please visit the A-CINCH project web page, (https://www.cinch-project.eu/). Send the filled-in form to Elena Macerata and Gabriele Magugliani (elena.macerata@polimi.it, Gabriele.Magugliani@polimi.it) within 31st July, 2021.
No course fee will be charged to the participants and a budget exists to support travel and accommodation participants. Visit the above link to get instruction on how to apply for a grant.

TRAVEL INFORMATIONS

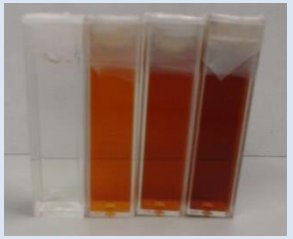
http://www.milanomalpensa-airport.com
http://www.trenord.it/en/timetable/timetable.aspx
https://maps.polimi.it/maps/

E-learning course FUNDAMENTALS ON CHEMICAL DOSIMETRY

Basic knowledge of radiation matter interaction and dosimetric quantities are presumed.

- Introduction on Dosimetry: role and needs
- Refreshment on
  - Dosimetric quantities
  - Dosimeter general principles and features
- Chemical dosimetry
  - General principles
  - Radiolysis
  - Radiolytic yield
  - Overview on chemical dosimeters
  - Chemical dosimeters and gel dosimeters for medical applications
- Introduction to ImageJ Free Software
- Assessment

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



PRACTICAL SESSION
14 – 17 September 2021

Hands-on experience

- ✓ **Laboratory chemical preparation of**:
  - Fricke gel dosimeters
  - Polymer gel dosimeters
- ✓ **Irradiation of samples with Radiotherapy LINAC**
- ✓ **Optical (1D and 2D) analysis of irradiated samples**
- ✓ **Data analysis (MS Excel or equivalent spreadsheet software):**
  - Use of ImageJ Open Software for images analysis
  - Calibration curve acquisitions
  - Comparison of different gel dosimetric properties
  - Evaluation of isodose curves of clinical treatment plans using GafChromic films

Technical tour at Humanitas Gavazzeni Bergamo
www.gavazzeni.it