

**Course offered for the PhD program
in Civil, Chemical and Environmental Engineering
Curriculum in Chemical, Material and Process Engineering –
a.a. 2019/2020 (cycles XXXV, XXXIV e XXXIII)**

(possibility of participation for students in other PhD cycles or other PhD courses)

1. Title

Principles of electrochemistry and emerging technologies for energy conversion and storage.

2. Course Description

The course aims to provide to future PhDs notions and fundamentals on emerging electrochemical technologies for energy production and storage: fuel cells (next generation), batteries, super/ultracapacitors, electrochemical reactors for hydrogen production.

The course will deal with the main electrochemical techniques in continuous (cyclic voltammetry) and alternating current (impedance spectroscopy), in relation to different technologies characterisation.

3. Course Organization

The course, organized into a single module, will consist of classroom lessons and practical laboratory training. The course will be held in English.

4. Teacher

The course teacher will be Dr. M. Paola Carpanese.

5. Duration and credits

The course (18 hours) will consist of 5 lessons, 3 hours each, and a 3 hours tutorial in the laboratory, for a total of 3 credits.

6. Activation mode and teaching period

The course will be held in February 2020 and a detailed calendar for lessons will be given to registered students.

7. Deadline for registration

Registration to the course must be made before January 25th, 2020. Students are requested to inform teacher by e-mail (carpanese@unige.it) about their registration.

8. Final exam

The final exam will consist in an oral discussion on the topics covered by the course. The students are requested to contact the teacher by email to establish the date of the exam.