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 and XXXIII)

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

1. Title
Materials for Fuel Cells

2. Course Description
The course aims at providing notions to the future PhD students on materials suitable for Fuel Cells applications.
The course will include the following topics:

- Basic principles of Chemical Cells operation
- Basic principles of Fuel Cells operation
- Fuel cells types (high and low temperature, electrolyte, …), specific chemical reactions and materials overview
- Functional materials for Fuel Cells (catalytic properties and mechanical/chemical stability)
- Structural Materials for Fuel Cells (mechanical/chemical stability)
- Basic principles of materials wettability
- Liquid electrolyte management
- Basic principles of Fuel Cell functional materials manufacturing

3. Course Organization
The course, organized into a single module, will consist of classroom lessons.

4. Teacher
The course teacher will be Dr. Paolo Capobianco.

5. Duration and credits
The course (10 hours) will consist of 4 lessons, 2 or 3 hours each, for a total of 2 credits.

6. Activation mode and teaching period
The course will be held yearly if at least one student will be registered by simple contact the teacher by email. The course will be held during the period February-March 2020. The exact dates of the lessons will be confirmed about one month before the beginning of the course.

7. Deadline for registration
Registration to the course must be made before 31.01.2020. Students are requested to inform the teacher by e-mail (alp.capobianco@alice.it) about their registration.

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