

ATHENS PROGRAM

19th – 23rd March 2018

Module ESPCI2: “Innovative Polymer Materials”

Module Main Location: ESPCI Paris, 10, rue Vauquelin, 75005 Paris

Teaching Team:

NICOLAY Renaud, Lecturer, ESPCI. [*Sessions #1*]

RIEGER Jutta, Head of Research, CNRS [*Session #2*]

MARCELLAN Alba, Lecturer, UPMC [*Session #3*]

CORTE Laurent, Head of Research, Mines ParisTech. [*Session #4*]

MIQUELARD-GARNIER Guillaume, Lecturer, CNAM. [*Session #5*]

LHOST Olivier, Industrial Speaker from TOTAL [*Session #6*]

CRETON Costantino, Research Director, CNRS. [*Session #7*]

PhD STUDENT, [*Session #8*]

Pre requisites:

This course is suitable for master's students in chemical or materials engineering. An introduction to Polymer science (Polymer Physics and Polymer Chemistry) is required and some knowledge of solid mechanics, materials characterization and of polymer rheology will be very useful.

Objectives:

At the end of the course, the students should have some working knowledge of the synthesis methods, structure, properties and some applications of soft innovative materials including hydrogels, coatings and elastomers.

Agenda:

Monday, March 19 (*Amphitheater HOLWECK – building C – ground floor*)

09:00 am – 09:30 am: Presentation of ESPCI Paris

9:30 am – 12:00 am: Session #1 Dynamic Networks: Chemistry and Applications

2:00 pm – 5:00 pm: Session #2 Innovative Eco-Friendly Coatings by Emulsion Polymerization

Tuesday, March 20 (*Amphitheater HOLWECK – building C – ground floor*)

9:00 am – 12:00 am: Session #3 Some strategies for Gel toughening

2:00 pm – 5:00 pm: Session #4 Artificial ligaments from fibrous hydrogels

Wednesday, March 21

9:00 am – 12:00am: Session #5 Processing and physical properties of multilayer polymeric structures
(*Room NOBELIUM – building C – 2nd floor*)

2:00 pm – 5:00 pm: Session #6: (Industrial perspective of innovation in polymer materials).
(*Amphitheater HOLWECK – building C – ground floor*)

Thursday, March 22 (*Amphitheater HOLWECK – building C – ground floor*)

9:00 am – 11:30 am: Session #7 (How elastomers break and how to make them tough)

2:30 pm – 5:00 pm: (Visit of Hutchinson Research Center in Montargis)

Friday, March 23 (*Amphitheater HOLWECK – building C – ground floor*)

9:00 am – 10:00 am: Final examination session in the form of quizzes on sessions #1 to 7

10:00 am – 11:00 am: Session #8. Answers to the quizzes and concluding remarks

Thank you for your attendance to the sessions!

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