

MESC

Master in Materials for Energy Storage and Conversion

Duration: 2 years

Course description:

The MESC (Materials for Energy Storage and Conversion) Master Course is designed to provide a 2 year (120 ECTS) education program in Materials Science and Electrochemistry, within 7 Universities in 3 European countries, China and USA, that host world-renowned leading research laboratories in the field of Energy-Related Materials.

The MESC Consortium is strongly associated with the ALISTORE-ERI (<http://www.alistore.eu/>) which gathers 21 European academic laboratories and 13 industrial companies and with the CIC Energigune (Spain).

The MESC Master Course will ensure intensive and innovative training, in English, by distinguished professors and researchers for ~30 students selected from around the world. The curriculum includes mandatory courses taken by the whole class, which are core topics of the master degree: basics and fundamentals of electrochemistry, materials science, solid state chemistry and energy storage, materials technology and processing, electrochemical storage and conversion of energy, conducting polymers, synthesis of nanomaterials. Furthermore, core courses will provide students with a sense of cohort. Optional units chosen in Semester 1 and 3 will provide deeper insight into specialized matters, where the involved university groups have world-leading expertise.

The course consists of three semesters of classes plus one semester for a Master thesis in a research laboratory in Europe, China or USA. Altogether, students will be allowed to study in two to four different countries:

* 1st semester in France:

Univ. Paul Sabatier (Toulouse): specialization in Applied Materials Science for Battery applications or Univ. of Provence (Marseille): specialization in materials surfaces and point defects;

* 2nd semester in Poland:

Warsaw Technical University: specialization in polymer chemistry and photovoltaic;

* 3rd semester in Spain or France:

Univ. of Cordoba (Spain): specialization in nano-materials for energy applications or Univ. of Picardie Jules Verne (Amiens, France): specialization in Battery technology, assembly, tests and physical analysis;

* 4th semester: 6-month Master thesis:

in a laboratory inside the ALISTORE E.R.I. (university lab or a company) or in the CIC Energigune (Vitoria, Spain) or at XIAMEN University (China) or at DREXEL University (USA).

After successful performance of the curriculum, students will graduate with a multiple Master diploma in "Materials for Energy Storage and Conversion" awarded by all the Universities of the Consortium and recognized in each of the countries visited. Completion of this Master degree will allow students to apply for PhD programs and/or work as R&D engineers in industry.

The admission criteria will be highly competitive, attracting students from leading universities all over the world. Candidates should have at least a BSc (Bachelor in Sciences) preferably in the fields of Chemistry, Materials Science or Physical Chemistry.

Website: http://www.u-picardie.fr/mundus_MESC

Partners:

UNIVERSITÉ DE PICARDIE JULES VERNE, France (Co-ordinating Institution)
XIAMEN UNIVERSITY, China
UNIVERSIDAD DE CORDOBA, Spain
UNIVERSITÉ DE PROVENCE, France
UNIVERSITÉ PAUL SABATIER, France
WARSAW UNIVERSITY OF TECHNOLOGY, Poland

DREXEL UNIVERSITY, United States

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Maximum grant:

578 600 € (30 000 € consortium + 548 600 € scholarships), 2011
506 000 € (30 000 € consortium + 476 000 € scholarships), 2012
456 400 € (30 000 € consortium + 426 400 € scholarships), 2013