

Cycle of studies: (Bachelor LT/ Master LM)

Degree course: Energy engineering, Materials engineering, Chemical Engineering

Title of the thesis: Performance of materials in fusion reactors

Type: experimental

RFX Supervisor: Claudia Gasparrini

Academic supervisor: Prof. Piergiorgio Sonato

Head of the RFX research group: Andrea Rizzolo

Leader of the RFX research program: Mauro DallaPalma

Description of the thesis:

One of the greatest challenges faced by materials in fusion power plants is to operate in an incredible harsh environment of high thermal and particle fluxes. In addition to properties such as good radiation tolerance, high thermal conductivity and corrosion resistance, the chosen materials should show good mechanical and thermal properties throughout operation. One of the aspects considered in this thesis will be to test corrosion resistant coatings to be applied on cooling circuits materials to ensure their integrity. You will work in tight collaboration with Istituto di Chimica della Materia Condensata e di Tecnologie per l'Energia (ICMATE) that have extensive expertise in coating manufacturing process for energy systems. You will develop skills in both coating manufacturing procedures and cooling circuits optimisation for fusion power plants.

Previous experience (if necessary): none

Date:

Status: (assigned/available)

Name of the student: (when assigned)