Smart Electroactive Materials

Component
École Nationale Supérieure d'Électrotechnique d'Électronique d'Informatique d'Hydraulique et des Télécommunications

In brief

- **Ametys Code:** N8EE20C
- **Open to exchange students:** Yes

Presentation

Objectives

- By the end of this course, students will have learned about several alternative solutions for electromechanical conversion.
- They will be able to describe the physical principles at work in piezoelectric, electro- and magnetostrictive devices, and shape memory alloys.

Description

- Review of the definition of smart materials.
- Description of the physical principles involved in magnetostriction, piezoelectricity, and shape memory alloys.
- Comparison of the electromechanical performance of the solutions and illustration of the fields of application.
- In-depth study of the principles and implementation of piezoelectric materials.