UE Electrical and transport phenomena - PHY135 -

Niveau d'étude
Bac ou équivalent

ECTS
3 crédits

Composante
Département de la licence sciences et technologies (DLST)

Période de l'année
Automne (sept. à dec./janv.)

- **Langue(s) d'enseignement:** Anglais
- **Ouvert aux étudiants en échange:** Non
- **Code d'export Apogée:** PAX1PH95

Présentation

Description

In the first part of the semester, the concepts of electricity (electric force, electric field, electric energy and electric potential) are introduced with emphasis on the historical and practical reasons for these concepts. They are applied to problems related to chemistry and biology in order to illustrate how and when to use these concepts. For example, electrical energy will be used to determine the conformations of molecules, whereas forces will be more appropriate for the study of motion.

The second part of the semester is dedicated to the study of the movements of charges under the effect of an electric field. The objective here is to understand electrophoresis in detail. The diffusion phenomena at work in this experiment are also described.

Heures d'enseignement

Electrical and transport phenomena	CM	12h
Electrical and transport phenomena	TD	12h
Electrical and transport phenomena	TP	8h

Pré-requis recommandés

Mathematics: vector manipulation

Physics: equations of motion

Période : Semestre 1

Compétences visées

- Use vectors to model a problem involving forces. Extend this skill to other vector quantities (the field in particular)
- To master the concepts of electrostatics (force, field, potential) and the first manipulations of the relationship between the field and the potential (experimental study in laboratory sessions).
- To know the basic concepts of transport and diffusion.
- Know how to write a practical work report (scientific report with introduction, protocol, raw data, analysis, discussion and conclusion).

Infos pratiques

Contacts

Responsable pédagogique

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