Course Unit : Industrial Clay Deposits (56 h – 6 ECTS –elective)

Content

Fieldtrip to industrial clay deposits
Visit to industrial units which operate
Introduction to industrial minerals and industrial clays
Definitions and special characteristics of industrial minerals

Industrial clays
Bentonites, kaolins, palygorskite and sepiolite, common clays. Geological characteristics of industrial clay deposits.

Important physical properties of industrial clays
Cation exchange capacity, plasticity, viscosity, colour, specific surface area, porosity, particle size distribution.

Techniques for characterization of industrial clays
Mineralogy, chemistry, physical and chemical properties, thermal techniques.

Assessment industrial clay deposits.
Laboratory assessment routes for evaluation of industrial clays: bentonite, kaoline, palygorskite

Learning

Theoretical knowledge on the most important industrial clays (genesis, geological occurrences, mineralogy, geochemistry). Familiarization with the industrial practice and processing units Knowledge of the most important physical properties, which control the applications of industrial clays. Relationship of the physical properties with the industrial applications.
Practical skills for characterization of industrial clays: determination of key physical properties, comparison with international standards and knowledge of laboratory assessment routes for different industrial clays.

Horary

* **Lecture** 24 h
* **Presentation of seminars :** 8 h
* **Practical works :** 24 h

Evaluation

* **Final examination :** 50% of the mark.
* **Evaluation during the teaching period :** 50 % (25% exercises, 25% project) of the mark.

Teaching Staff

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