UNIVERSITY of MISKOLC
Faculty of Materials Science and Engineering

Antal Kerpely Doctoral School of Materials Science & Technology

Organic chemical technologies for engineers

Dr. Zsolt Fejes

COURSE DESCRIPTION

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Organic chemical technologies for engineers

Dr. Zsolt Fejes

Lecturer

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Recommendation

The lecture is propoesd for all students of the Kerpely doctoral school, especially in the field of chemical technology and polymer technology.

Language

Hungarian or English.

Scope

The objective of the course is to teach the most important organic chemical technologies and the organic processes connected to them.

Methodology

For larger student numbers, the course is held in contact lectures. The time of contact courses is based on agreements with the students. In case of 1-2 students, keywords are given of the corresponding block. Basic questions are also given for the blocks. 3 meetings are held during which answers for the basic questions, the students' questions and fundamentals are discussed.

Topics

- *Most important products and intermediers of the organic chemical industry*
- *Petrochemical technologies*
- *Polyethylene and polypropylene production*
- *Alkilating processes*
- *Acylatingprocesses*
- *Halogenation*
- *Nitration*
- *Hydrogenation processes*
- *Phosgenation*
- *Oxidation processes*
- *Sulfonation and sulfation*
- *Diazotization and azo coupling*
- *Production of alkyd, polyester and epoxy resins*

References

1. Kirk-Othmer (Ed.): Kirk-Othmer Encyclopedia of Chemical Technology, 5th Edition, John Wiley & Sons, Inc., 2007.
2. Hans-Jürgen Arpe: Industrial Organic Chemistry, 5th Edition, John Wiley & Sons, Inc., 2010.
3. James G. Speight: The Chemistry and Technology of Petroleum, 5th Edition, CRC Press, 2014.

Exam

Oral exam if basic questions are answered correctly.

Complex exam questions

1. Most important petrochemical processes and their parameters. Polyethylene and polypropylene production.
2. Industrial technologies regarding alkylation, acylation, halogenation.
3. Industrial technologies for producing monomers of polyurethanes and PVC
4. Industrial technologies regarding nitration, sulfonation and sulfation
5. Industrial technologies regarding oxidation, reduction, diazotation and azo coupling