Oxidation processes

Course description: The course aims at a comprehensive understanding of the oxidation processes in chemical technology. Specific goals include gaining: - an understanding of basic methods of catalysts preparation and modification; - an understanding of elementary steps in catalysis; - an understanding of the catalyst characterisation using spectroscopic and microscopic methods; - an understanding of the reaction mechanism during the oxidation processes; - an understanding of oxidation reactions such as catalytic combustion, oxidative hydrogenation, oxidative methane coupling, allylic oxidation of propane to acrolein and oxidative coupling of ethylene and acetic acid.

Lectures content: Basic methods of catalysts preparation and modification. Elementary steps in catalysis / Catalyst characterisation using spectroscopic and microscopic methods / Reaction mechanism in catalysis / Methane catalytic combustion / Volatile Organic Compounds catalytic combustion / Oxidative dehydrogenation of hydrocarbons / Oxidative methane coupling to C2 hydrocarbons / Oxidative coupling of ethylene and acetic acid / Allylic oxidation of propane to acrolein

Literature:

Assessment method: Final test
Prerequisites: Student should have basic knowledge from physical chemistry, organic chemistry and chemical technology
Primary target group: all specialties students (Chemical Engineering / Chemical Technology)

Lecturer: dr inż. Przemysław Jodłowski
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Deadline for application: 30th of August for students applying for winter semester
Remarks: The course will start only if chosen by entire group of students