Petroleum and Coal

Book review

Hydrocarbon Technology: Energy Feedstocks and Technologies

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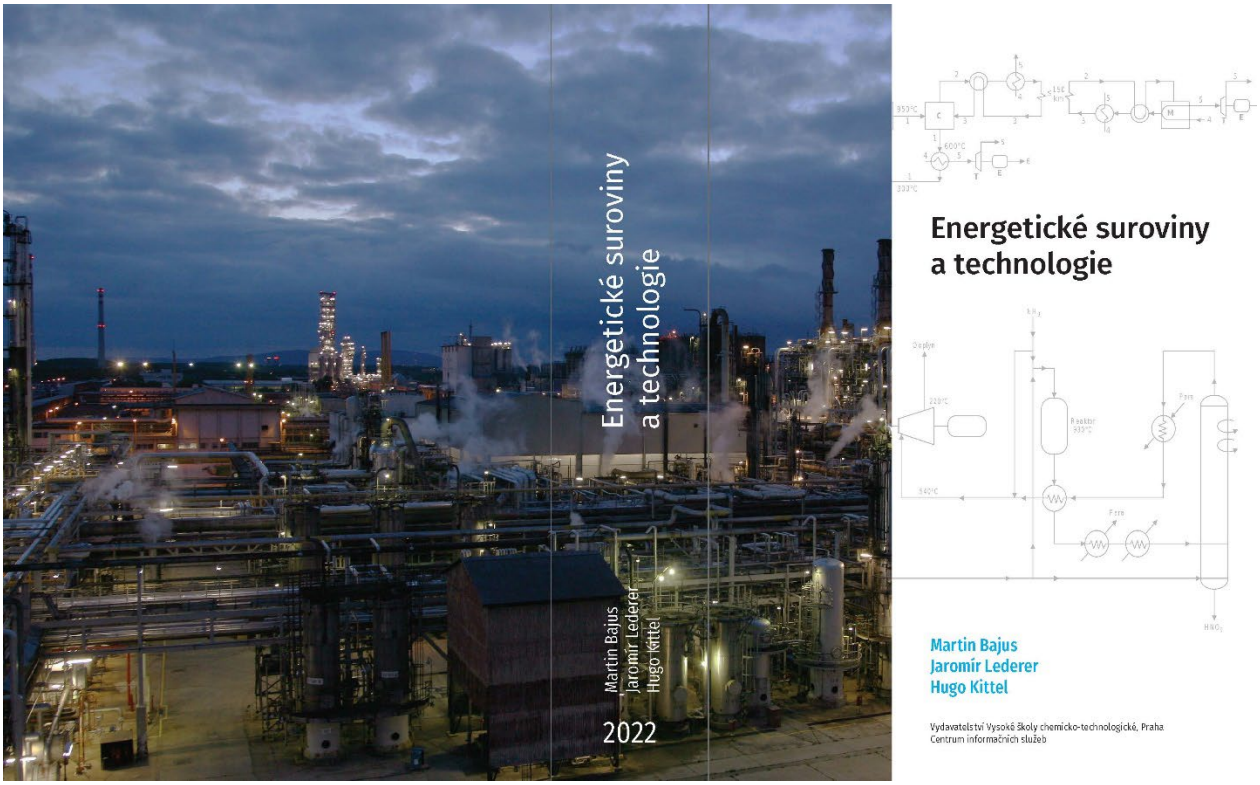
ISBN: 978-80-8814-36-6 AMCA Ltd. Prague 2022 367 Pages



The presented extensive monograph *Energy Feedstocks and Technology* is primarily a university textbook, the issues of which become the basis of several engineering subjects included in the study plans of high school and technical universities. University students, workers from the energy industry, oil, natural gas, and petrochemical processing can find here reliable published data, the latest data, an objective description of integrity and analyses, as well as the formulation of conclusions. In the monograph, the authors explain the key position of petrochemical processes on the path of active transition from the fossil scenario to more sustainable systems of energy sources. They are because the transformation of energy systems in the future will not be possible without the conversion of chemical energy.

- With the advent of electromobility and the growing role of the integrity of refining and petrochemical technologies, it will be possible to gradually transform a larger part of hydrocarbons from oil and natural gas into today's energy carriers: hydrogen, methanol, dimethyl ether, and ammonia.
- The connection of hydrocarbon technologies with hydrogen and environmental processes in general will lead soon to the penetration of electrochemical processes into complex chemical technologies.

• The clear goal of decarbonizing the hydrocarbon sector is to produce hydrogen from three key greenhouse gases: carbon dioxide, methane, and water.

• After capture of carbon dioxide, its chemical use is mainly considered selective hydrogenation to methanol, methanation to methane or hydrogenation to higher hydrocarbon mixtures.

• There are significant perspectives of synergistic linking of biomass-based economies with the circular economy. It applies 5R processes: reduction, reprocessing, reuse, recycling, and renewal.

• The application of small modular reactors in the desalination of sea water, the production of synthetic and alternative fuels, the production of ethanol from biomass and the production of hydrogen can also be viewed in a new way. Nuclear energy is the only reliable non-carbon option for countries such as Slovakia, the Czech Republic, and France.

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