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First Wiley's edition of Petrochemistry is the latest in books by the author on the Petrochemical Processing, Hydrocarbon Technology, and Green Engineering. It is justified by rapid rate of change in the hydrocarbon technology. The author discuss many new processes and improvements in many older ones. There have also been extensive changes in the economics of the hydrocarbon industry, in its location and issues of green engineering and sustainability. The growing importance of sustainable, process intensification and addressing greenhouse gas emission is reflected throughout the book. A comprehensive textbook on petrochemical conversion processes for petroleum and natural gas fractions as produced by refinery operations.

The author of this innovative textbook is Martin Bajus, Professor of Chemical Technology at Slovak University of Technology, in the Faculty of Chemical & Food Technology in Bratislava. Professor Bajus is a high qualified expert in refinery, petrochemical, energy, and recycling technologies, and founder of the Bratislava School of Pyrolysis at the Slovak University of Technology. Prof. Bajus is a long time member of the international editorial board Petroleum & Coal, international journal for petroleum processing, petrochemistry, and coal processing. The book is written for advanced students working in the areas of petrochemistry, hydrocarbon technology, natural gas, energy materials and technologies, alternative fuels, and recycling technologies. The book is also a valuable reference for industrial practitioners in oil and gas industry. At the Slovak University of Technology, in the Faculty of Chemical and Food Technology, the text is basis for some courses and supplementary others:

- Petrochemistry
- Organic Technology and Petrochemistry
- Petroleum and Hydrocarbon Technology
- Energy Materials and Technologies
- Recycling Technologies

- Natural Gas
- Alternative Fuels
- Catalysis

The main purpose of this book is to bring alive concepts forming the basis of chemical technology and to give a solid background for innovative process development. This is done by treatment of actual practice processes, which all present one or more challenges that chemical engineers have to deal with during the development of these particular processes and which are often still challenges. It is not author intention to treat chemical technology in an encyclopedic way. The emphasis is on concepts rather than on facts. Hopefully, this approach will stimulate students in chemical engineering and also those who play a large role in the field, such as graduates and technologist who work or are interested in chemical technology. The next generation should invent and develop novel operations and processes.

The innovative textbook provides essential links between the chemical sciences and chemical technology, between petrochemistry and hydrocarbon technology. The book brings alive key concepts forming the basis of chemical technology and presents a solid background for innovative process development. In all chapters, the processes described are accompanied by simplified flow schemes, encouraging students to think in terms of conceptual process designs.

Petrochemistry: Petrochemical Processing, Hydrocarbon Technology, and Green Engineering introduces students to a variety of topics related to the petrochemical industry, hydrocarbon processing, fossil fuels resources, as well as fuels and chemical conversion. The first chapter covers the fundamentals and principals for designing several of processes in the book, including discussions on thermodynamics, chemical kinetics, reactor calculations and industrial catalysts. The following chapters address recent advances in hydrocarbon technology, energy technology, and sources of hydrocarbons. The book then on to discuss the petrochemical industry based on four basic pillars, all derived from petroleum and natural gas.

Petrochemistry's four pillars are as follows:

- *Pillar A*
 - Production of lower alkenes
 - Production of lower alkenes from other sources
 - Petrochemicals from C₂ – C₃ alkenes
- *Pillar B*
 - Production of BTX aromatics
 - Chemicals from BTX aromatics
- *Pillar C*
 - C₁ technology
- *Pillar D*
 - Diversification of petrochemicals such as petrochemicals containing oxygen, halogens, nitrogen, and sulfur
 - Derived processes and products such as polymers, agrochemicals, surfactants, dyes, textile chemicals, and related products
 - Fuels, lubricants, and additives on petrochemical basis
 - Application of petrochemicals in other chemical Technologies

The growing importance of sustainable technology, process intensification and addressing greenhouse gas emissions is reflected throughout the book. As a scientific working with long-time practical experience I can recommend this textbook as a study material to all students that study chemical technology, petrochemistry or similar field of science.