DESCRIPTION

Completely revised and updated, the third edition of this bestseller discusses the concept and ongoing development of using methanol and derived dimethyl ether as a transportation fuel, energy storage medium, and as a chemical raw material to replace fossil fuels.

The contents have been expanded by 35% with new and up to date coverage on energy storage, methanol from biomass and waste products, as well as on carbon dioxide capture and recycling. Written by the late Nobel laureate George Olah, Alain Goeppert and G. K. Surya Prakash, this is an inspiring read for anyone concerned with the major challenge posed by environmental problems including global warming and ocean acidification due to massive increase in fossil fuel use. The book provides a comprehensive and sustainable solution to replace fossil fuels in the long run by chemical recycling of carbon dioxide through renewable methanol utilizing alternative energy sources such as solar, wind, hydro, geothermal and nuclear. The Methanol Economy is being progressively implemented in many parts of the world.

ABOUT THE AUTHOR

George A. Olah obtained his doctorate at the Technical University of Budapest in 1949 and was the Donald P. and Katherine B. Loker Distinguished Professor of Organic Chemistry and Director of the Loker Hydrocarbon Institute at the University of Southern California, USA. He passed away on March 8, 2017. Olah received numerous awards and recognitions worldwide, including memberships in various academies of science and 12 honorary degrees. He had some 1,400 scientific papers, 20 books and more
than 140 patents to his name. Professor Olah's research spanned a wide range of synthetic and mechanistic organic chemistry. But most notably, his work on the chemistry of carbocations earned him the 1994 Nobel Prize in Chemistry.

Alain Goeppert is a research associate in the groups of Profs. George A. Olah and G. K. Surya Prakash at the Loker Hydrocarbon Research Institute at the University of Southern California, USA, since 2002. After obtaining his diploma in chemistry from the University Robert Schuman in Strasbourg, France, he received his engineering degree from the Fachhochschule Aalen, Germany. He then returned to Strasbourg to obtain his PhD in 2002 under the direction of Prof. Jean Sommer at the Université Louis Pasteur. Dr. Goeppert's current research is focused on the transformation of methane and CO2 into more valuable products and CO2 capture technologies.

G. K. Surya Prakash is currently a Professor and Olah Nobel Laureate Chair in Hydrocarbon Chemistry and Scientific Co-Director at the Loker Hydrocarbon Research Institute at University of Southern California, USA. After gaining his bachelor and master degrees from India, he obtained his PhD from the University of Southern California under the direction of Prof. Olah in 1978. Professor Prakash has close to 600 scientific papers, 9 books and 25 patents to his name, and has received many accolades, including two American Chemical Society National Awards. His primary research interests are in superacid, hydrocarbon, synthetic organic & organofluorine chemistry, energy and catalysis areas.

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