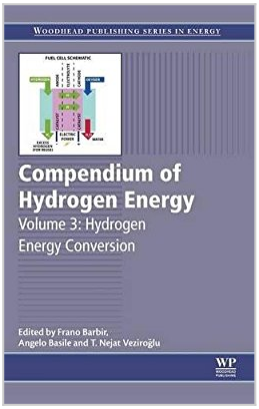

Compendium of Hydrogen Energy: Hydrogen Energy Conversion (Woodhead Publishing Series in Energy)

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Compendium of Hydrogen Energy: Hydrogen Energy Conversion (Woodhead Publishing Series in Energy) From Woodhead Publishing

Compendium of Hydrogen Energy: Hydrogen Energy Conversion, Volume Three is the third part of a four volume series and focuses on the methods of converting stored hydrogen into useful energy. The other three volumes focus on hydrogen production and purification; hydrogen storage and transmission; and hydrogen use, safety, and the hydrogen economy, respectively.

Many experts believe that, in time, the hydrogen economy will replace the fossil fuel economy as the primary source of energy. Once hydrogen has been produced and stored, it can then be converted via fuel cells or internal combustion engines into useful energy.

This volume highlights how different fuel cells and hydrogen-fueled combustion engines and turbines work. The first part of the volume investigates various types of hydrogen fuel cells, including solid oxide, molten carbonate, and proton exchange membrane. The second part looks at hydrogen combustion energy, and the final section explores the use of metal hydrides in hydrogen energy conversion.

- Highlights how different fuel cells and hydrogen-fueled combustion engines and turbines work
- Features input written by leading academics in the field of sustainable energy and experts from the world of industry
- Examines various types of hydrogen fuel cells, including solid oxide, molten carbonate, and proton exchange membrane
- Presents part of a very comprehensive compendium which, across four volumes, looks at the entirety of the hydrogen energy economy

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Editorial Review

About the Author
Basile, a Chemical Engineer, is a senior Researcher at the ITM-CNR where is responsible of the researches related to both the ultra-pure hydrogen production CO2 capture using Pd-based Membrane Reactors. Angelo Basile's h-index is 36, with 187 document results (April 1st, 2016, www.scopus.com). He has 130 scientific papers in peer to peer journals and 230 papers in international congresses; editor/author of 27 scientific books and 80 chapters on international books on membrane science and technology; 6 Italian patents, 2 European patents and 5 worldwide patents. He is referee of 92 international scientific journals and Member of the Editorial Board of 18 of them. Basile is also Editor associate of the Int. J. Hydrogen Energy and Editor-in.-chief of the Int. J. Membrane Science & Technol. and Editor-in-chief of Membrane Processes (Applications), a section of the international journal Membranes: Basile also prepared 25 special issues on membrane science and technology for many international journals (IJHE, Chem Eng. J., Cat. Today, etc.). He participated to and was/is responsible of many national and international projects on membrane reactors and membrane science. Basile served as Director of the ITM-CNR during the period Dec. 2008 - May 2009. In the last years, he was tutor of 30 Thesis for master and Ph.D. students at the Chemical Engineering Department of the University of Calabria (Italy). Form 2014, Basile is Full Professor of Chemical Engineering Processes.

Dr. Veziroglu, a native of Turkey, graduated from the City and Guilds College, the Imperial College of Science and Technology, University of London, with degrees in Mechanical Engineering (A.C.G.I., B.Sc.), Advanced Studies in Engineering (D.I.C.) and Heat Transfer (Ph.D.).

In 1962 - after doing his military service in the Ordnance Section, serving in some Turkish government agencies and heading a private company - Dr. Veziroglu joined the University of Miami Engineering Faculty. In 1965, he became the Director of Graduate Studies and initiated the first Ph.D. Program in the School of Engineering and Architecture. He served as Chairman of the Department of Mechanical Engineering 1971 through 1975, in 1973 established the Clean Energy Research Institute, and was the Associate Dean for Research 1975 through 1979. He took a three years Leave of Absence (2004 through 2007) and founded UNIDO-ICHET (United Nations Industrial Development Organization - International Centre for Hydrogen Energy Technologies) in Istanbul, Turkey. On 15 May 2009, he attained the status of Professor Emeritus at the University of Miami.

Dr. Veziroglu organized the first major conference on Hydrogen Energy: The Hydrogen Economy Miami Energy (THEME) Conference, Miami Beach, 18-20 March 1974. At the opening of this conference, Dr. Veziroglu proposed the Hydrogen Energy System as a permanent solution for the depletion of the fossil fuels and the environmental problems caused by their utilization. Soon after, the International Association for Hydrogen Energy (IAHE) was established, and Dr. Veziroglu was elected president. As President of IAHE, in 1976 he initiated the biennial World Hydrogen Energy Conferences (WHECs), and in 2005 the biennial World Hydrogen Technologies Conventions (WHTCs).

In 1976, Dr. Veziroglu started publication of the International Journal of Hydrogen Energy (IJHE) as its Founding Editor-in-Chief, in order to publish and disseminate Hydrogen Energy related research and development results from around the world. IJHE has continuously grew; now it publishes twenty-four issues a year. He has published some 350 papers and scientific reports, edited 160 volumes of books and proceedings, and has co-authored the book "Solar Hydrogen Energy: The Power to Save the Earth".

Dr. Veziroglu has memberships in eighteen scientific organizations, has been elected to the Grade of Fellow in the British Institution of Mechanical Engineers, American Society of Mechanical Engineers and the American Association for the Advancement of Science, and is the Founding President of the International Association for Hydrogen Energy.

Dr. Veziroglu has been the recipient of several international awards. He was presented the Turkish Presidential Science Award in 1974, made an Honorary Professor in Xian Jiaotong University of China in 1981, awarded the I. V. Kurchatov Medal by the Kurchatov Institute of Atomic Energy of U.S.S.R. in 1982, the Energy for Mankind Award by the Global Energy Society in 1986, and elected to the Argentinean Academy of Sciences in 1988. In 2000, he was nominated for Nobel Prize in Economics, for conceiving the Hydrogen Economy and striving towards its establishment.

Users Review

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