

International Conference on

RENEWABLE ENERGY AND RESOURCES

July 24-25, 2017 Vancouver, Canada

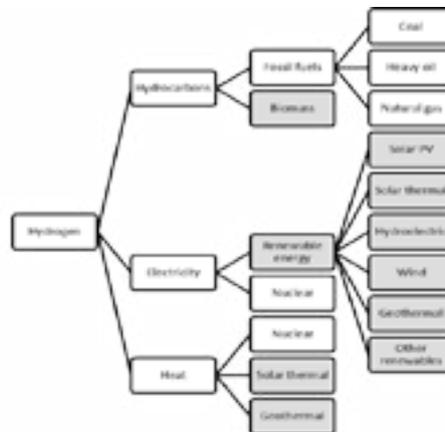


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Enhancing renewable energy prospects via hydrogen energy systems

The prospects for renewable energy are enhanced through the use of hydrogen energy systems in which hydrogen is an energy carrier. As easily accessible fossil fuel supplies become scarcer and environmental concerns increase, hydrogen is likely to become an increasingly important chemical energy carrier. As the world's energy sources become less fossil fuel-based, hydrogen and electricity are expected to be the two dominant energy carriers for the provision of end-use services, in a hydrogen economy. Thus, hydrogen energy systems allow greater use of renewable energy resources. In this presentation, the role of hydrogen as an energy carrier and hydrogen energy systems and their economics are described and reviewed. There are many commercial processes for producing hydrogen from fossil fuel and non-fossil fuel sources (including renewables). Technologies for the storage and distribution of hydrogen exist. Technologies are developing for utilizing hydrogen as an energy carrier, especially in transportation. The technologies needed for hydrogen energy systems are undergoing much research and development.



Biography

Marc A Rosen is a Professor at the University of Ontario, Institute of Technology in Oshawa, Canada, where he served as Founding Dean of the Faculty of Engineering and Applied Science. He was the President of the Engineering Institute of Canada. He is a registered Professional Engineer in Ontario and serves as Editor-in-Chief of several journals and Director of Oshawa Power and Utilities Corporation. With over 60 research grants and contracts and 600 publications, he is an active Teacher and Researcher in sustainable energy, environmental impact and energy technology (including renewable energy and efficiency improvement). Much of his research has been carried out for industry and he has written numerous books. He has worked for organizations such as Imatra Power Company in Finland, Argonne National Laboratory near Chicago and the Institute for Hydrogen Systems near Toronto. He has received numerous awards and honors.

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