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PROFESSIONAL ACTIVITIES
Member, AIChE, Materials Research Society, International Association for Hydrogen Energy, Electrochemical Society

PROFESSIONAL INTERESTS
Research interests include the development of novel vapor deposition techniques for production of thin film solar cells and sensors, development of cost-effective technologies for renewable hydrogen production, and the testing and development of high performance fuel cells for military and civilian applications. Specific projects have included development of copper- indium-diselenide solar cells on light weight flexible substrates, development of processes for photoelectrochemical hydrogen production, and development of hydrogen fuel purity guidelines for fuel cell application.

University of Hawaii Information:

Director, Hawaii Natural Energy Institute, Jan. 2002 - present
Interim Director, Hawaii Natural Energy Institute, Dec. 1999 - Jan. 2002
Acting Director, Hawaii Natural Energy Institute, Sept. 1998 - Dec. 1998
Researcher, Hawaii Natural Energy Institute, 1997 -1999
Graduate Faculty, Department of Mechanical Engineering, 1992 -

Graduate Faculty, Department of Electrical Engineering, 1989 -
Associate Researcher, Hawaii Natural Energy Institute, 1988 - 1997

Other Professional:

Manager, Institute of Energy Conversion (IEC), Reactor Design and Analysis Group, University of Delaware, 1986 -1988
Engineer, Institute of Energy Conversion, University of Delaware, 1980 - 1986
Research Assistant, Department of Chemical Engineering, University of Delaware, 1977-1980
Research Assistant, Department of Ocean Engineering, University of Hawaii, 1975 - 1977
Engineer, Mobil Research and Development Corp., Paulsboro, NJ., 1973 - 1975

Education:

Ph.D., Chemical Engineering, University of Delaware, 1980
Modeling and design of a chemical reactor for continuous deposition of CdS thin-film semiconductors for photovoltaic applications
MS., Ocean Engineering, University of Hawaii, 1977
BS., Chemical Engineering, University of Delaware, 1973 with Honors and Distinction
Awarded Outstanding Graduate from the College of Engineering

Selected Publications:

Over 25 publications in peer reviewed journals and over 20 conference proceedings in the areas of photovoltaics, photoelectrochemical hydrogen production, and thin-film electronic materials. Six patents and three patent disclosures.

Hihara, L.H., A. Iwane, S. Voss, R.E. Rocheleau, and Z.E. Zhang. 1998. Initiation of Corrosion in Metal Substrates Coated with Plasma-Deposited Hydrogenated Amorphous Silicon Alloy Thin Films. Corrosion Science

Rocheleau, R.E., E.L. Miller, and A. Misra. 1998. High-Efficiency Photoelectrochemical Hydrogen Production Using Multijunction Amorphous Silicon Photoelectrodes. Energy and Fuels 12:3-10.

Rocheleau, R.E., and E.L. Miller. 1997. Photoelectrochemical Production of Hydrogen: Engineering Loss Analysis. International Journal of Hydrogen Energy 22:771-782.

Rocheleau, R.E., M. Tun, and S. Hegedus. 1997. Analysis and Optimization of High-Efficiency Multijunction a- Si:H Solar Cells. In Proceedings of 26th IEEE PV Specialists Conference. New York: Institute of Electrical and Electronics Engineers.

Sharfarman, W.N., B.M. Basol, J.S. Britt, R.B. Hall, and R.E. Rocheleau. 1997. Semiconductor Processing and Manufacturing. Progress in Photovoltaics: Research and Applications 5:359-364.

Miller, E.L., and R.E. Rocheleau. 1997. Electrochemical Behavior of Reactively Sputtered Iron-Doped Nickel Oxide. Journal of the Electrochemical Society 144:3072-3077.

Miller, E.L., and R.E. Rocheleau. 1997. Opto-Electronic and Electrochemical Properties of Sputter-Deposited NiOx Thin-Film Catalysts. Journal of the Electrochemical Society 144:1995-2003.

Rocheleau, R.E., E.L. Miller, A. Misra, and S. Song. 1996. Hydrogen Production Using Multijunction Amorphous Silicon Photoelectrodes. In Hydrogen Energy Progress XI. Edited by T.N. Veziroglu, C.J.

Winter, J.P. Baselt, and G. Kreysa. Schon & Wetzel GnibH 3:2755-2760.

Rocheleau, R.E., and M. Vierthaler. 1994. Optimization of Multijunction a-Si:H Solar Cells Using an Integrated Optical/Electrical Model. In Proceedings of the 21st World Conference on Photovoltaic Energy Conversion. New York: Institute of Electrical and Electronics Engineers.

Additional Publications: Richard Rocheleau [2]
Other:

RECENT GRANTS AND AWARDS
Principal Investigator or co-Principal Investigator on over $10 million of extramurally funded research in photovoltaics, hdyrogen technologies, and fuel cells.

US Department of Energy, "Hawaii Hydrogen Center for the Development an Deployment of Distributed Energy Technologies. Sept 2004 -

Office of Naval Research "Hawaii Energy & Environmental Technology Initiative" June 2001 -

Triton Systems " CIGS Solar Cell Fabrication and Testing" Jan 2004 -
Trex Corporation, "Photoconductor on Active Pixel Image Sensors" August 1998 - June 2000

National Defense Center of Excellence for Research in Ocean Sciences through Sea Engineering. "Development of an Ultra-High Resolution Stress Detection System for Marine Applications. November 1998 - October 2000.

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Tags: hydrogen [3] thin films [4]

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