

Nanoporous Metals for Advanced Energy Technologies

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This book focuses on an important part of advanced materials (i.e., nanoporous materials), with an emphasis on the ongoing energy technologies. It encompasses the various nanoporous metals (NPMs) that have been studied in the past and further describes their utilization in energy technologies. The book systematically explains recent energy generation and storage technologies where NPMs play an important role as a constituent entity. The authors cover the utilization of NPMs for fuel cells, supercapacitors, and lithium-battery applications.

Chapter 1 introduces NPMs, and chapter 2 gives further in-depth information with respect to mechanistic as well as methodological formation of various NPMs.

Chapters on fuel cells (chapter 3), supercapacitors (chapter 4), and lithium

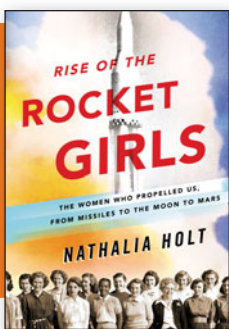
batteries (chapter 5) present work on the importance and utilization of NPMs for these applications. Chapter 3 discusses the importance of NPMs while making a comparison with the existing status of proton-exchange membrane fuel cells and nanoporous gold. The chapter discusses how NPMs form a new class of materials for electrodes. Chapters 4 and 5 on electrochemical energy storage present relevant aspects of electrochemistry. The book explains how NPMs are excellent technological candidates for energy-storage solutions.

Apart from the previously mentioned fields of energy application areas, the authors additionally include specific sections on the use of NPMs for other evolving energy technologies, such as the hydrogen and oxygen evolution reactions. These fields are of tremendous interest and

are one of the frontier research areas where energy generation by water splitting has been discussed. The book clearly guides the reader with respect to the scope of NPMs in research and development.

The book overall demonstrates the status and importance of NPMs in energy technologies. The figures and tables are appropriately chosen and displayed to provide insight into their respective research and technology. Accordingly, the recent status of the work is appropriately cited in relevant references. Further conclusions in the last chapter guide the reader with respect to the prospects of NPMs. This book is valuable to readers who are looking for concise and updated information on all of the advanced energy technologies where NPMs find an application. It is useful to scientists and technologists working in these areas. Some may find this book best suited as a reference book in materials science. It appropriately includes theoretical as well as experimental information relevant to NPM applications.

Reviewer: Pramod H. Borse of the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), India.



Rise of the Rocket Girls: The Women Who Propelled Us, from Missiles to the Moon to Mars

Nathalia Holt

Little, Brown and Company, 2016

352 pages, \$16.99 (e-book \$2.99)

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Rocket Girls is based on Holt's interviews of the female "human computers" of the early days of the Jet Propulsion Lab (JPL). The computers did the calculations, usually by hand, that were needed to help the engineers get the rockets and ultimately spacecraft into space and orbit. The men of the "Suicide Squad" (Frank Malina, Jack Parsons, and Ed Forman), affiliated with the California

Institute of Technology, started experimenting with rockets in the mid-1930s and enlisted one of the wives, Barbey Canright, to do their propulsion calculations. The members of the Suicide Squad went on to help found JPL and became famous aeronautical engineers. However, Canright quit when she had a baby, and that was the end of her career as a human computer. Her colleague, Macie Roberts,

became manager of the computers and developed the policy of exclusively hiring women for the job, and went on to develop a large staff of women.

The book goes on to introduce the stories of many of the women whom Roberts hired. These women's lives were similar to those of mothers today: they struggled with work and family obligations. Their struggle to overcome the mind-set against working mothers is briefly discussed. Unfortunately, the book gives little information about the math they performed and their technical accomplishments, leaving their careers an enigma.

Holt introduces some drama into the book as the women follow the course of funding decisions. Despite JPL's leadership in rocketry, the United States funded a Navy program, Vanguard, as the US satellite program for the International