

### Successful Women Ceramic and Glass Scientists and Engineers: 100 Inspirational Profiles

Lynnette D. Madsen

Wiley, 2016

640 pages, \$65.00 (e-book \$52.99)

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Of all the successful female scientists, most outside of their field would only recognize a handful of their names. Madame Curie is world renowned, and others, such as Rosalind Franklin, are now getting their due credit. However, the history of most sciences is nearly devoid of famous women.

Madsen makes an attempt to change the trajectory of women's place in the physical sciences in this book. Her stated purpose is to remedy the underrepresentation and underappreciation of women in physical sciences by profiling the careers of a diverse range of 100 contemporary women in a "narrow area of materials science and engineering to make a point [that] there are plenty of successful women [scientists] out there!" Other objectives of the book are to help the careers of the women featured and also to attract and retain more women into the physical sciences. From her perch as a program director in materials research at the National Science Foundation in the United States, Madsen is well positioned to see such a broad range of research and how women are making an impact.

The book is organized into 100 chapters, listing the women in alphabetical order. Each profile is structured in the same manner and contains each woman's name, position, birthplace, "tags" for their interest (administration, industry, etc.), and personal information, such as nationality, race, and number of children. The front page also contains a photo of each woman at a young age. Also included are the publication/invention record for each (plus her h-index) and her proudest career moment to date. This is followed by her academic credentials, research expertise, list of awards, a short biography of her early life and career history, and three most cited publications. Finally, her perspective on challenges in science and being a woman in science are described. Each profile wraps up with some final words of wisdom and a recent photo. All is neatly summarized in four to six pages for each profile.

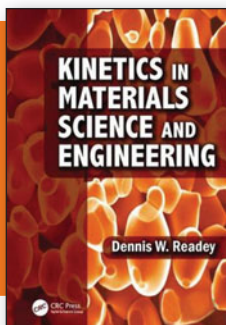
Plodding through the stories of women's lives in alphabetical order in the same format, I soon felt like I was looking through resumes for a new hire (a "binder of women"). I became distracted

by h-factors and citation counts, and after skimming the awards, I wondered why some bothered to list teaching awards and symposia that they had organized. The advice to women varied from blaming men for keeping them down to simply being grateful for the opportunity to work in science. The words of wisdom were filled with standard platitudes: work hard, build relationships, and do not be afraid. Absent was the sense of inspiration that I had been hoping for and have found in other books on women in science.

While Madsen's project was a tremendous effort, I think it could have been improved upon with more aggressive editing and perhaps highlighting half as many women, with a focus on different categories (e.g., university, industry, inventors, policy, etc.) rather than an alphabetical listing. Shorter award lists and more personal stories might have made the chapters more engaging.

However, in the aggregate, Madsen may have achieved her goal, as the book is highly web searchable. This book is a useful tool for those trying to evaluate these 100 women for more awards or for those looking for conference speakers. While not the most poetic book, nor the stuff of bedtime reading, Madsen has created a tome such that no one can deny that women are now major contributors to the physical sciences.

**Reviewer: Karen Swider Lyons** *researches fuel-cell and battery materials and their integration into naval systems in Alexandria, Va., USA.*



### Kinetics in Materials Science and Engineering

Dennis W. Readey

CRC Press, 2017

636 pages, \$127.96 (e-book \$111.97)

ISBN: 9781138732469

This book is intended for materials science and engineering undergraduate students who have taken a course on kinetics in physical chemistry. It intends

to give in-depth knowledge in the area of kinetics of the formation and reactivity of a variety of materials. The book came out as a result of rich experiences

gained by the author in teaching a course on materials science and engineering for more than 30 years in three institutions. The preface of the book summarizes the main features of the book, with an emphasis on treatment at atomistic and macroscopic levels, solutions to diffusion-controlled processes, derivation of the Boltzmann distribution equation, treating the glass transition as a relaxation process, and the Kirkendall effect applied to metals, polymers, and soft materials. Some of these topics include industrial examples.