

Engineering Design with Polymers and Composites, Second Edition

By James C. Gerdeen PhD PE, Ronald A.L. Rorrer PhD PE



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Engineering Design with Polymers and Composites, Second Edition continues to provide one of the only textbooks on the analysis and design of mechanical components made from polymer materials. It explains how to create polymer materials to meet design specifications.

After tracing the history of polymers and composites, the text describes modern design concepts, such as weight-to-strength ratio and cost-to-strength ratio, for selecting polymers and composites for design applications. It also presents computer methods for choosing polymer materials from a database, for optimal design, and for laminated plate design.

New to the Second Edition

This edition rearranges many chapters and adds a significant amount of new material. Composites are now covered in two chapters, instead of one. This edition also includes entirely new chapters on polymer fusing and other assembly techniques, rapid prototyping, and piezoelectric polymers.

Suitable for mechanical and civil engineering students as well as practicing engineers, this book helps readers get an edge in the rapidly changing electromechanical industry. It gives them a fundamental foundation for understanding phenomena that they will encounter in real-life applications or through subsequent study and research.



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Editorial Review

About the Author

James C. Gerdeen, Ph.D., P.E., is a professor emeritus at the University of Colorado at Denver and Health Science Center and a distinguished professor at Michigan Technological University. He has published over 65 papers and over 100 research reports. His research interests include pressure vessel design, structural analysis, metal working manufacturing, and mechanical design.

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