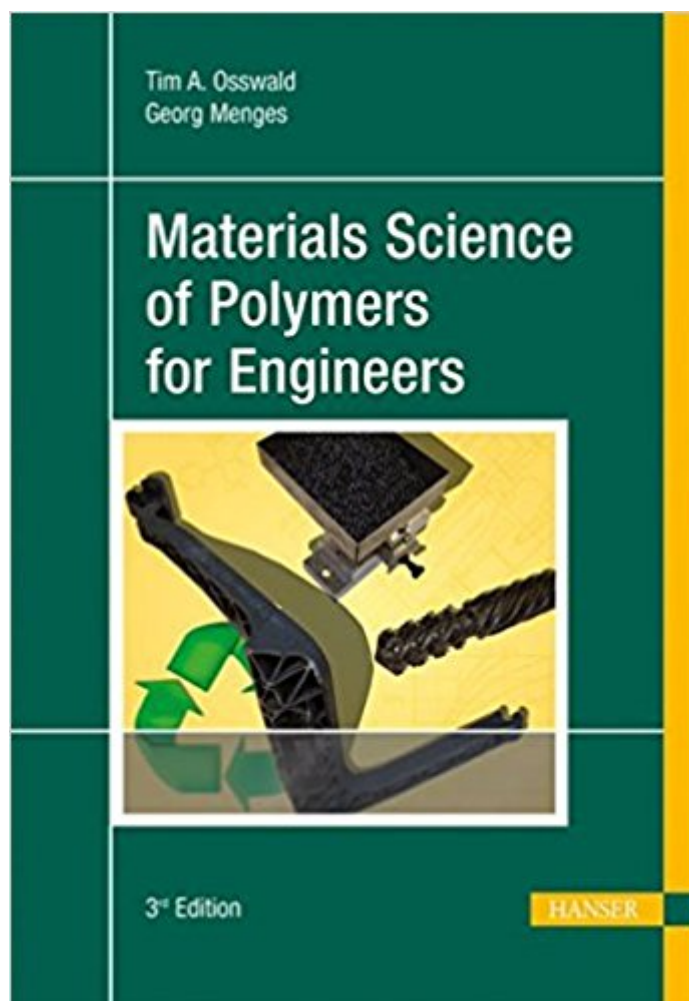


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Materials Science Of Polymers For Engineers 3E



Synopsis

This unified approach to polymer materials science is divided in three major sections: Basic Principles covering historical background, basic material properties, molecular structure, and thermal properties of polymers. Influence of Processing on Properties discussing processing and design by discussing rheology of polymer melts, mixing and processing, the development of anisotropy, and solidification processes. Engineering Design Properties covering the different properties that need to be considered when designing a polymer component from mechanical properties to failure mechanisms, electrical properties, acoustic properties, and permeability of polymers. A new chapter introducing polymers from a historical perspective not only makes the topic less dry, but also sheds light on the role polymers played, for better and worse, in shaping today's industrial world. The first edition was praised for the vast number of graphs and data that can be used as a reference. A new table in the appendix containing material property graphs for several polymers further strengthens this attribute. The most important change made to this edition is the introduction of real-world examples and a variety of problems at the end of each chapter.

Book Information

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Customer Reviews

Tim Osswald is a Professor of Mechanical Engineering and Director of the Polymer Engineering Center at the University of Wisconsin Madison. Originally from Cúcuta, Colombia, he received his B.S. and M.S. in Mechanical Engineering from the South Dakota School of Mines and Technology and his Ph.D. in Mechanical Engineering at the University of Illinois at

Urbana-Champaign in the field of Polymer Processing. He spent two and a half years at the Institute for Plastics Processing (IKV) in Aachen, Germany, as an Alexander von Humboldt Fellow. He received the National Science Foundation's Presidential Young Investigator Award, as well as the 2001 VDI-K Dr.-Richard-Escales-Preis. In 2006 he was named an Honorary Professor at the University of Erlangen-Nuremberg in Germany. Professor Osswald teaches polymer processing and designing with polymers and researches in the same areas. Professor Osswald has published over 100 papers and many books for Hanser, including Materials Science of Polymers for Engineers 3E (©2012), Injection Molding Handbook 2E (©2007) Compression Molding (©2003), Polymer Processing: Modeling and Simulation (©2006), Plastics Testing and Characterization (©2008), International Plastics Handbook (©2006), and Understanding Polymer Processing (©2010). Professor Osswald has also been consulted by several industries, is one of the co-founders of The Madison Group, and is the Director of the Technical Advisory Board of SIMTEC Silicone Parts. Professor Georg Menges is the former head of the Aachen Institute for Plastics Processing and is considered to be one of the pioneers of the plastics-processing industry. In his career at the Institute, he grew it from a small, technical-training operation to a powerhouse of plastics processing education and research. Research-and-development work for more than 300 industrial sponsors is carried out in teams of both students and scientists. Virtually every aspect of plastics processing has been undertaken by the Institute, and many leaders in both German and international plastics companies have been influenced by Professor Menges and his group. Professor Menges studied mechanical engineering at the University of Stuttgart and received a Dr.-Ing. degree in 1995; he retired in 1989.

Polymers wasn't that bad. But education books are far too expensive to be worth a damn.

Very well written textbook for beginners.

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