



# Materials and Design: The Art and Science of Material Selection in Product Design

By Michael F. Ashby, Kara Johnson

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## Materials and Design: The Art and Science of Material Selection in Product Design

Materials and Design: The Art and Science of Material Selection in Product Design, Second Edition, discusses the role of materials and processes in product design. The book focuses on the materials that designers need, as well as on how and why they use them. The book's 10 chapters cover topics such as function and personality, factors influencing product design, the design process, materials selection, and case studies in materials and design. Appendices for each chapter provide exercises for readers, along with detailed charts of technical attributes of different materials for reference.

This book will be particularly useful to both students and working designers. Students are introduced to the role of materials in manufacturing and design, with the help of familiar language and concepts. Working designers can use the book as a reference source for materials and manufacturing.

\* The best guide ever published on the on the role of materials, past and present, in product development, by noted materials authority Mike Ashby and professional designer Kara Johnson--now with even better photos and drawings on the Design Process

\* Significant new section on the use of re-cycled materials in products, and the importance of sustainable design for manufactured goods and services

\* Enhanced materials profiles, with addition of new materials types like nanomaterials, advanced plastics and bio-based materials

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#### **Review**

From the first edition:

"...well-written and easy-to-read...unique and a worthwhile reference for designers, engineers, and suppliers."  
- Adhesives & Sealants Newsletter, 2006

"Well presented, easy to read with concise descriptions. Very suitable for students on courses which involve art design and the use of modern materials" - Derrick Parker, Univ. of Portsmouth, Dept. Mech. & Manufacturing Eng

"I believe materials engineering faculty should use this book at some point in their materials engineering curriculum. It can then be a resource for students as they travel through the major. The same can be said in an ideal world for industrial engineering, industrial design, and maybe even mechanical engineering."--Blair London, Cal Poly San Luis Obispo

"I don't know of any similar book. I used Ashby & Jones's Engineering Materials I & II for many years, but these are more technical and probably better as stand-alone texts for an engineering course. I think Materials & Design would be an excellent supplement to an Engineering Materials course, and could serve as the primary text in Industrial or Product Design course focusing on materials."--Gary Benenson, City College of New York

#### **About the Author**

Royal Society Research Professor Emeritus at Cambridge University and Former Visiting Professor of Design at the Royal College of Art, London, UK

Mike Ashby is sole or lead author of several of Elsevier's top selling engineering textbooks, including Materials and Design: The Art and Science of Material Selection in Product Design, Materials Selection in Mechanical Design, Materials and the Environment, and Materials: Engineering, Science, Processing and Design. He is also coauthor of the books Engineering Materials 1&2, and Nanomaterials, Nanotechnologies and Design.

Since publishing the first edition of Materials and Design in 2002, Kara Johnson has worked at IDEO, a global design firm and strategic consultancy. Kara leads their efforts in Materials, with a focus on Manufacturing. Her work is primarily about linking a company's brand and business strategies with the products they make.

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