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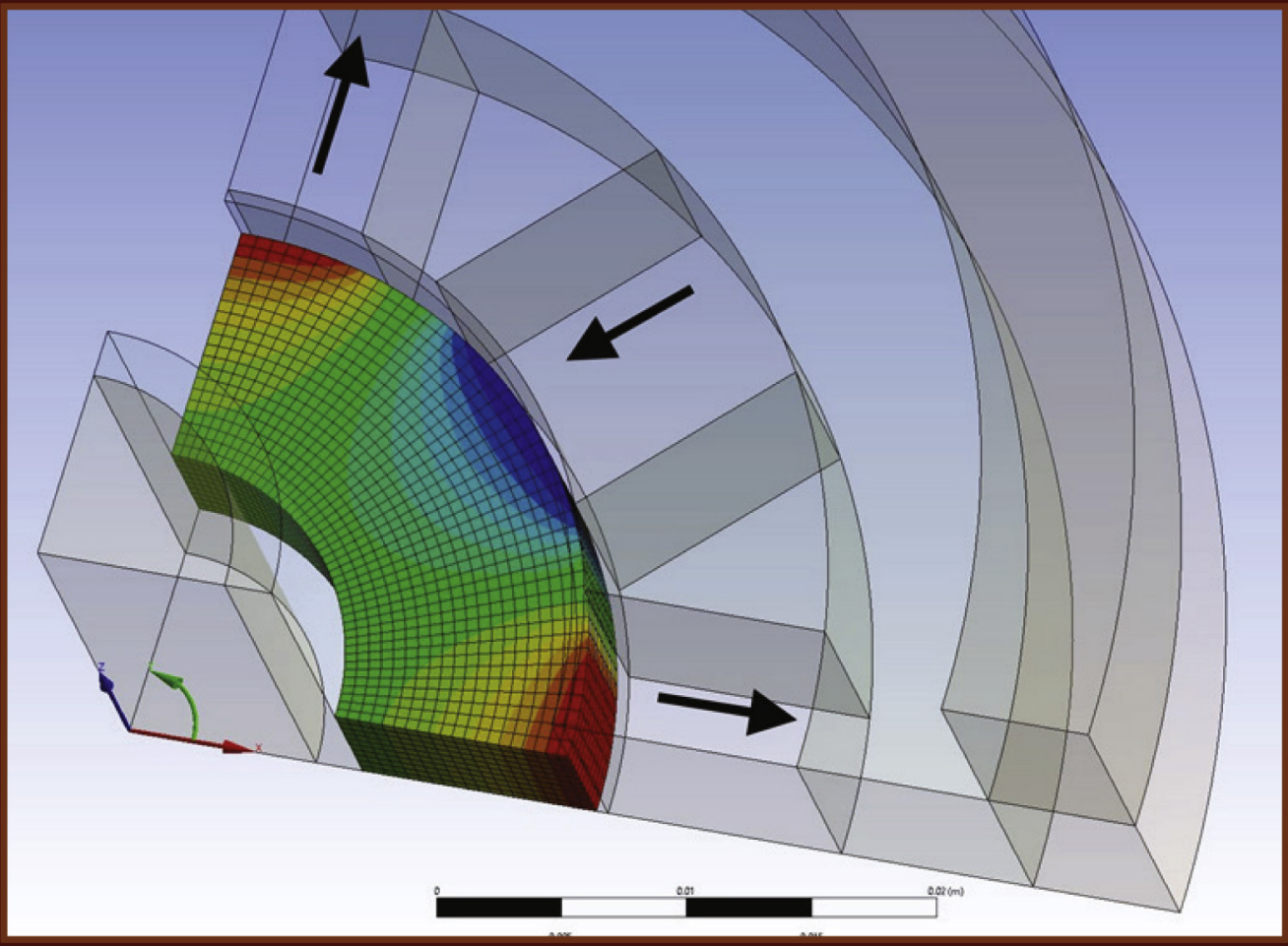

MODERN PERMANENT MAGNETS

Edited by
JOHN J. CROAT
JOHN ORMEROD

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The primary focus of *Modern Permanent Magnets* is to provide an update on the status and recent technical developments which have occurred in the various families of permanent magnets that are produced today. The book provides an overview of the key advances that have occurred in the last 20 years and covers the full supply chain from raw materials, magnet processing through to applications and markets.

The book begins with two chapters of general interest including the history of permanent magnets and the fundamental properties of permanent magnets. These chapters are followed by an overview of the important families of permanent magnets that are produced today. Coatings used to protect permanent magnets and the various tests used to confirm that these magnets meet all specifications are discussed. Also included is a chapter on critical materials used in modern permanent magnets, a subject that has become increasingly important in recent decades. Finally, the major applications for each family of permanent magnets and the size of the market for these applications are provided. The book includes an Appendix providing a Glossary of Magnetic Terms to assist the readers in better understanding the technical terms used in the other chapters.

Modern Permanent Magnets is suitable for materials scientists and engineers working in academia and in industry R&D.

Key Features

- Provides an in-depth overview of all of the important families of permanent magnets that are produced today by leading technical figures in each area.
- Includes background information on the fundamental properties of permanent magnets, the status of key critical raw materials including the rare earth, major applications of each family of permanent magnets, and advances in coating and coating technology.
- Each chapter is written by renowned subject matter experts who have contributed their unparalleled expertise and insight to create a collection that will become a standard in the field of permanent magnet materials.

About the Editors:

Dr. John J. Croat received the PhD degree in Metallurgy from Iowa State University in 1972. While working at the General Motors Research Laboratories, he was instrumental in the discovery of rapidly solidified NdFeB magnetic powder and the development of bonded NdFeB magnets. He received 11 patents in this area, including all of the US composition patents for NdFeB magnets. Between 1984 and 1995, he helped found Magnequench, the business unit set up by General Motors to commercialize NdFeB magnets, and was Managing Director of this business between 1991 and 1995. Since 2007, he has served as a Consultant to the worldwide permanent magnet industry.

Dr. John Ormerod received the PhD degree in Metallurgy from the University of Manchester in 1978. He has more than 40 years of research, product development, and manufacturing experience in magnetic materials. From 1979 to 1990, he worked for Phillips Electronics and eventually became the General Manager of the rare earth magnet division. Between 1990 and 2002, he held the position of Vice President/General Manager of Arnold Engineering, a manufacturer of a wide range of magnetic materials. In 2002, John was named President of Res Manufacturing in Milwaukee, Wisconsin. In 2014, he founded JOC LLC, a consulting firm that provides a unique combination of business and technical expertise to the Global Magnetics and Metals Industries.

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