

Microwaves and Metals

By Manoj Gupta, Eugene Wong Wai Leong

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Using microwaves to treat metal-based materials is rapidly emerging as an energy-efficient tool to interact with metals for a number of processes such as sintering, melting, brazing, carburizing and annealing. Microwaves can sinter a wide variety of metal compacts with comparable or enhanced end properties, while at the same time delivering tremendous energy savings over conventional sintering. Microwave processes are therefore gaining increasing attention and adoption in both academia and industry.

Gupta and Wong have written this comprehensive text to introduce readers to the world of microwaves and the interaction of microwaves with metals and metals-based formulations. The authors have combined numerous research results from a wide range of sources alongside their own work in the field. Also included are overviews of microwave heating of other non-metal materials and the equipment used for microwave-assisted metallurgy. With microwave techniques poised for widespread adoption, *Microwaves and Metals* is an essential text for all metallurgists and materials engineers.

- Provides a thorough grounding in microwave fundamentals and their application to metals processing
- Informs readers of the latest developments in the field
- Presents a convenient single source for all aspects of microwave processing of metals and materials
- Contains liberal illustration to compare and benchmark research results
- Introduces all the necessary equipment, preparing readers for real-world practice

Microwaves and Metals is ideal for a post-graduate or advanced undergraduate course in materials science or metallurgy. Materials and metallurgical engineers in industry, who are keen on cheaper, faster techniques, will also benefit from this book.

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Editorial Review

Review

"This comprehensive text introduces readers to microwaves and their interaction with metals." (*Materials World*, October 2008)

From the Back Cover

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About the Author

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Wong Wai Leong, Eugene, Department of Mechanical Engineering, National University of Singapore

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