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An Introduction to Material Science

Dr. Brajadulal Chattopadhyay
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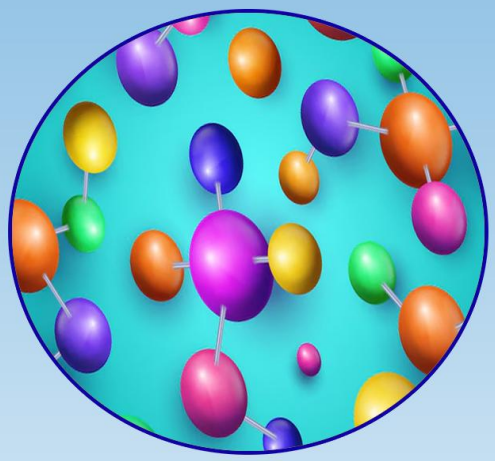

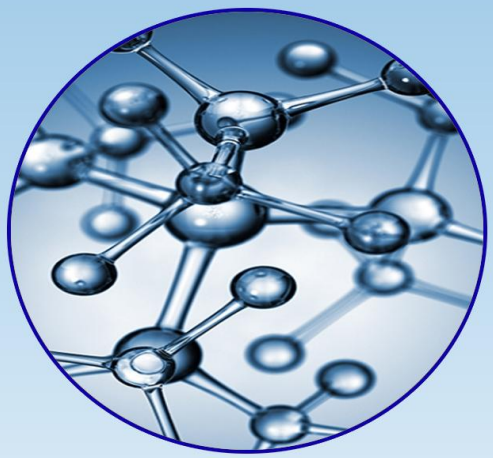

First Edition

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An Introduction to Material Science

[For B.Sc. (General & Honours), M.Sc. (Physics) and Engineering students for all Indian Universities]

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PREFACE

Material Science is a multidisciplinary field that highlights on the properties, performance and applications of materials based on mechanical, thermal, electrical, quantum mechanical, engineering aspects. It is associated with the different branches of science like Physics, Chemistry as well as Engineering Science. In this subject we study about the structure of materials at various scales from atomic to microscopic levels.

In this book we have tried to discuss about the fundamental properties of materials in simple language. The applications of materials are enriched with some recently published research articles in various reputed journals. We hope that the students of Physics, Chemistry and Engineering science in different colleges and universities will be benefitted to some extent if they use this book.

All kind of suggestions and criticisms from every corner will be gladly accepted to improve the quality of this book.

Author's

ABOUT THE AUTHOR

Professor (Dr.) Brajadulal Chattopadhyhay, is currently working as a Professor of Physics in the Department of Physics of Jadavpur University, India. Prof. Chattopadhyay received his Master degree (1987) and PhD (1994) degree from the University of Calcutta, India and worked at Bose Institute, India and Technical University of Delft, the Netherlands as postdoctoral researcher. The basic scientific field of Prof. Chattopadhyhay lies mainly in the field of Material Science and Bio-concrete development by using hot spring anaerobic bacteria to enhance the strength and durability of structural materials. He is engaged in this filed since 2001 and published his work in many internationally reputed journals. He is currently engaged in the field of Quantum dot incorporated nanomaterial to fabricate nanogenerator nanotechnology and its applications. He has already supervised more than 30 PhD students and he is holding two National and two international patents in his career.

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Dr. Nurul Alam, Ph.D (Jadavpur University), is currently working as an Assistant Professor and Head, Department of Physics, Shyampur Siddheswari Mahavidyalaya, Howarh, under the University of Calcutta, West Bengal, India. He has published many of National and International research articles and Chaired, Delivered invited talks, Presented papers and attended a number of National and International conferences. He is supervising Ph.D. students and his research field in Bio-Physics and Bio-Concrete Technology. He has invited as an expert and resource person in different times of government and non-governmental organizations.

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