

encounters between different peoples ranging across the globe, from Polynesia to Africa and from America to China. This, the concluding part of the book, illustrates the power and parsimony of this bio-geographic framework in coming to terms with what one might unhesitatingly term the most important set of questions confronting us today as citizens of an increasingly 'globalized' world.

At the end of the book what we have is more than just a case for the role of environmental factors in human history or a set of partial answers to momentous questions. Diamond has succeeded in setting and passionately pleading for an alternative research agenda for history. An agenda which will borrow heavily from other historical sciences, such as geology, astronomy, ecology and evolutionary biology. With great precision, Diamond elaborates the many methodological

and philosophical parallels between these endeavors and human history, parallels which leave one with a lot of food for thought if not often completely convinced.

The book is an absorbing effort at synthesis which takes on some of the most profound questions we face and sets out answers (which in turn raise many more questions) which are bound to leave a lasting impact on the way historical research is done. A large number of interesting anecdotal detours more than make up for the one aspect of the book which detracts from it ... its length! But then when you take on something as awesome as world history itself you surely cannot get shorter than this! Beg, borrow or steal it (better still buy it)...but do read it!

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Material Marvels

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Material Marvels

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National Book Trust of India, New Delhi

1999, Price Rs. 40/.

Many new materials are being synthesised for use in our daily routine. The book, which is for popular reading, describes different

types of materials in a simple way. The anecdotes and a couple of sentences here and there about the scientists involved make reading lively. The chapter heading and sub-headings are well chosen. The book is divided into eight chapters and each chapter is devoted to different kinds of materials. In fact, the book has a whole chapter on different forms of carbon, making the book complete and up to date information.

Chapter 1 gives good introduction to materials of present times. How new materials were

tailored is described well. Also, classification of materials and a brief description of each category is presented. Manipulating metals is the title of Chapter 2. Here metals and their mechanical properties are dealt with. Advantages of alloying two or more metals are brought out well.

Ceramics have become increasingly important in modern times. Synthesis of high purity ceramics is an important step. There are ceramics whose, chemical, electrical and mechanical properties can be tailored depending on the application requirements. Thus, the structural, heat resistant, high thermal conducting, magnetic and super conducting ceramics play an important role in modern technology. All these aspects are touched upon in Chapter 3.

Semiconductors is the topic of discussion in Chapter 4. The energy band description in the semiconducting materials and how doping changes the conduction are explained. Principles behind the working the rectifiers and transistors are touched upon. Making of an IC chip is described in detail. Chapter 5 gives the whole history of the discovery of the bucky balls. The potential uses of the fullerenes in various places including the anti-AIDS drug are informative. Different types of polymers like the linear, cross-linked, ladder etc., are discussed in chapter 6. How the change from traditional polymer to stronger polymer is brought about is dealt

with in detail. Advanced polymers and polymer fibres are also introduced briefly.

Compositing two or more materials to obtain better properties than the individual materials forms the subject of Chapter 7. Uses of composites in advanced aircrafts, automobile industries, sports accessories and at sea are discussed. The last chapter gives information about many materials like polymers, metals, alloys, ceramics, etc. that are used in medical field.

Materials science and technology is a vast and fast growing field. The author has introduced the advanced materials and their uses effectively. However, some more details are desired. For example, while discussing the SMART materials there is no mention of the crystallographic phase transition that occurs and the illustration needs to be accurately reproduced from the old literature. Another example is while discussing transformation toughening in Chapter 3. The word 'shape' is used instead of crystal structure.

On the whole it is a good book and gives an overall view of the materials and their uses. It is also priced reasonably and I recommend it to undergraduate/post graduate students interested in getting a whiff of materials science.

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