The Quest Continues ...

Vikram Jayaram

The Quest for New Materials
S T Lakshmikumar
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A popular book on science succeeds if it conveys to the lay reader or a young student, a sense of excitement and wonder coupled with a desire to find out more or even join the profession. In that sense, *The Quest for New Materials* by Lakshmikumar is a welcome addition to bookstores in India. The author goes from tool making chimpanzees through composites to standing waves in a corral of iron atoms. The first chapter dealing with the transition from using naturally occurring materials to the development of ceramics and metallurgy is possibly the best in terms of its coverage and style. Even here, I would have thought a few more examples of modern applications were in order, whether from the standpoint of ubiquity or from extremes of service conditions, such as in a jet engine. The chapter on nanotechnology, perhaps mandatory in this day and age, comes upon us somewhat suddenly. The subsequent discourses on more fundamental subjects like chemistry and biology ought to have come earlier. While there is a somewhat excessive initial emphasis on colour changes in nanoparticles, other subjects are later introduced that provide a flavour of potential uses including catalysis, water clean-up, drug delivery and hydrogen storage in carbon nanotubes, not to mention the reminder of how nanotechnology has been the norm in the semiconductor industry long before it became fashionable elsewhere. In this connection, it might have been useful to mention the more familiar ink-jet printer and LCD projector in the same breath as micro-mirrors for optical switching. The chapter on characterization, where, incidentally, the tunneling microscope perhaps better belongs, will, I suspect lose many readers because of the somewhat more abstract presentation. The section on Physics of Living is very readable, but what is it doing in this book? Doubtless life forms have lessons for materials designers, but apart from a stray allusion to synthetic spider's silk, I saw nothing in the chapter to justify its inclusion in a book with this title. The chapter on physics and experimental methods is perhaps the weakest and might have been better left out or re-written from a perspective that better serves the title and the aims of the rest of the book. There are problems with the proof reading e.g., titanium nitride described as TiC, phrases in sentences repeated occasionally or, more annoyingly, left incomplete at the end of pages. But all said and done, a stimulating book for a young student to read and, who knows, perhaps embark on a career in materials.

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