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Brazel, Christopher S.: Fundamental Principles of Polymeric Materials (Book Review)

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on individual indicator species. The “third pole” receives the slightest attention. The book deserves wide distribution and readership, regardless of its frequently radical approach. The editor and contributors effectively establish their overall claim that world political leadership has failed both humanity and nature. However, despite the poor-quality reproduction of the graphics—many of which are almost unintelligible—the book is expensive; the high price will limit its distribution. **Summing Up:** Recommended. ★★ Lower-division undergraduates through professionals.—*J. D. Ives, emeritus, Carleton University*

50-2090 QL607 2011-36525 CIP
Steyer, Sebastien. **Earth before the dinosaurs**, tr. by Chris Spence; illustrated by Alain Bénétiau. Indiana, 2012. 182p bibl index afp ISBN 0253223806 pbk, \$35.00; ISBN 9780253223807 pbk, \$35.00

People know about dinosaurs, but there is a long history of life before the dinosaurs, and some of these long-extinct animals have important connections with animals contemporaneous with humans. Paleontologist Steyer (Natural History Museum, Paris, France) provides a rather detailed and diverse introduction to vertebrates preceding the dinosaurs as well as some contemporaneous with them, showing how the multiple types of aquatic and terrestrial forms originated and diverged. This is not a dry survey of the anatomy. Rather, the author focuses on important parts of the fossil record and shows restorations of skeletons and—equally importantly for providing a visual image—lots of multicolored artwork showing the animals discussed in their probably natural positions and movements. Beyond the animals themselves, Steyer discusses the important life-affecting changes occurring during geologic events of past years. A significant part of the text describes how paleontologists find, excavate, and prepare fossils, including techniques used to study the bones to make conclusions regarding the life activities of the past. Practically every page has a color plate, and the volume includes a geologic timetable. The coverage of French and some African and Asian paleontological material and literature should be especially useful for American readers. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates and above; general readers.—*D. Bardack, emeritus, University of Illinois at Chicago*

Engineering

50-2091 TA455 2011-52328 CIP
Brazel, Christopher S. **Fundamental principles of polymeric materials**, by Christopher S. Brazel and Stephen L. Rosen. 3rd ed. Wiley, 2012. 407p bibl index ISBN 0470505427, \$99.95; ISBN 9780470505427, \$99.95

This high-level overview of polymer material science is intended as an introductory text for upper-level undergraduates and beginning graduate students. Brazel (Univ. of Alabama) has joined Rosen (Univ. of Missouri-Rolla) to produce this third edition (2nd ed., 1993; 1st ed., 1982). Both are instructors in engineering departments and the text reflects this, concentrating more on the physical nature of polymers and less on their chemistry. However, the math is kept to the basic level. The volume starts in the molecular scale and moves to the macro scale. The authors cover a large variety of topics in limited depth (22 chapters in 394 pages). The book is similar in scope to *Polymeric Materials*, by G. Ehrenstein (CH, Jul'01, 38-6193). One strong point of the text is the numerous worked examples and end-of-chapter problems, which allow students to test their

understanding of the material. In addition, each chapter includes a set of references for the content presented. A fairly comprehensive index supports the text. This would make a fine textbook for an introductory materials science course but perhaps would be less useful as a reference book.

Summing Up: Recommended. ★★ Upper-division undergraduates and lower-level graduate students.—*J. H. Glans, Sacred Heart University*

50-2092 TK2931 2011-12792 CIP
Eisler, Matthew N. **Overpotential: fuel cells, futurism, and the making of a power panacea**. Rutgers, 2012. 260p index afp ISBN 0813551773, \$49.95; ISBN 9780813551777, \$49.95

In this extensively researched and detailed book, Eisler provides the “rest of the story” of fuel cells and fuel cell applications progress in the 20th century. This is a historian’s account of the dramaturgy of the promotion, but eventual failure, of the fuel cell to achieve a significant role in any area of energy production, conversion, or consumption. The story the author unfolds will be a revelation to followers and believers in “techno-socio” solutions to the world’s energy problems and opportunities for resolution. According to Eisner, the fuel cell is a “product of the crises of the American socioeconomic system—concurrent deindustrialization, environmental devastation, and financial speculation.... The latest generation of fuel cell futurists promised solutions they could not deliver.” He makes a convincing case that compelling precedents in technological progress engendered an optimism and a fatalism in a fuel cell culture that biased and doomed its research and commercial strategies to failure. The author writes with commendable narrative skill and a refreshing academic discipline. Valuable for readers who retain serious hopes for the near-term success of fuel cell technology. **Summing Up:** Highly recommended. ★★★ Upper-division undergraduates and above; general audiences.—*S. R. Walk, Old Dominion University*

50-2093 TH880 2011-35825 MARC
Pearce, Annie R. **Sustainable buildings and infrastructure: paths to the future**, by Annie R. Pearce, Yong Han Ahn, and HanmiGlobal. Routledge, 2012. 482p bibl index ISBN 9780415690911, \$165.00; ISBN 9780415690928 pbk, \$49.99; ISBN 9780203130841 e-book, contact publisher for price

Pearce (Virginia Tech), Ahn (East Carolina Univ.), and HanmiGlobal (South Korean construction management firm) address the issues of environmental sustainability of constructed facilities throughout the ten chapters of this book. The first four and the last two chapters deal with the fundamentals of the green sustainable concept and future trends of this practice, respectively. The middle four chapters focus on the design and construction phases of the project, and the details of imparting the green sustainable feature to the constructed facilities. Topics include sustainable sites, water and wastewater performance, energy optimization, and materials optimization. The book also discusses policies for the appropriate integration of operation and maintenance of these facilities. Each chapter comes with a generous supply of questions and exercises, which are ideal for classroom debates. Each chapter also includes a comprehensive list of references. Judicious and artful use of colors in the text, headings, pictures, and charts makes this book inviting to read and probably helps students retain the material presented. It will be useful for undergraduate curricula in architectural design, building construction, or construction management, and equally applicable to four-year and two-year colleges. **Summing Up:** Recommended. ★★ Lower- and upper-division undergraduates and two-year technical program students.—*P. F. Rad, formerly, Western Carolina University*