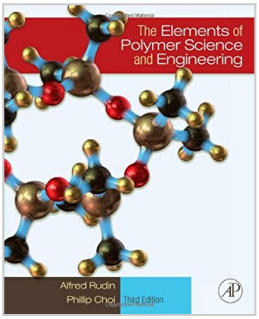

The Elements of Polymer Science and Engineering, Third Edition

By Alfred Rudin, Phillip Choi Ph.D. P.Eng

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Whether you are an upper or graduate level student studying polymer science and engineering or an engineer new to the field of polymers, you'll benefit from reading *The Elements of Polymer Science and Engineering 3e*. Since the publication of the second edition in 1999, the field of polymers has advanced considerably. A key feature of the third edition is the inclusion of new concepts in existing chapters as well as new chapters covering selected contemporary topics such as behavior of natural polymers, polymer nanocomposites, and use of polymers in nanotechnology. There are also several enhancements to the book’s pedagogy, including the addition of numerous worked examples and new figures to better illustrate key concepts and the addition of a large number of end-of-chapter exercises, many of which are based on recently published research and relevant industrial data.

- Focuses on applications of polymer chemistry, engineering, and technology
- Explains terminology, applications, and versatility of synthetic polymers
- Connects polymerization chemistry with engineering applications
- Contains practical lead-ins to emulsion polymerization, viscoelasticity, and polymer rheology

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Editorial Review

Review
"The textbook has been a solid teaching text for introductory polymer science and engineering courses....It remains a very good textbook for many introductory concepts and is thought out and developed well for teaching purposes." **--Eli Pearce, Polytechnicnic University, Brooklyn, NY, Polymer News, 1999**

From the Back Cover

Whether you are an upper or graduate level student studying polymer science and engineering or an engineer new to the field of polymers, you'll benefit from reading ***The Elements of Polymer Science and Engineering 3e***. Since the publication of the second edition in 1999, the field of polymers has advanced considerably. A key feature of the third edition is the inclusion of new concepts such as polymer nanocomposites and metallocene catalysts in existing chapters as well as new chapters covering selected contemporary topics such as behavior of natural polymers, polymer dynamics, and diffusion in polymers. The book has been completely reorganized to become more aligned with how instructors currently teach the course. In addition there are several enhancements to the book's pedagogy that make it more appealing to both instructors and students, including the addition of new worked examples and new figures to better illustrate key concepts, and new of end-of-chapter exercises, many of them based on recently published research and relevant industrial data.

About the Author
Alfred Rudin is a member of the Professional Engineers of Ontario. Professor Rudin spent 14 years with a large Canadian chemical company in research, development, and production. He joined the University of Waterloo chemistry department where he is now a Distinguished Professor Emeritus. He is the author or co-author of 295 research papers and 25 patents. Dr. Rudin is also a fellow of the Chemical Institute of Canada, the Royal Society of Canada, and the Federation of Societies for Coatings Technology.

Prof. Phillip Choi received his B.A.Sc. in chemical engineering in 1988 from the University of British Columbia and his M.A.Sc. and Ph.D., also in chemical engineering, in 1992 and 1995, respectively, from the University of Waterloo. While pursuing his graduate studies, he received scholarships from the Federation of Societies for Coatings Technology and the Natural Sciences and Engineering Research Council of Canada to study solubility properties of non-ionic surfactants and polyolefin blends under the guidance of Professor Alfred Rudin and Dr. Tom Kavassalis of Xerox Corporation, currently VP - Strategy Planning.

Upon completion of his Ph.D., Prof. Choi worked in the coating industry as a development chemist developing high solids urethane and water-borne epoxy coating formulations. He then joined the Department of Chemical and Materials Engineering at the University of Alberta as a sessional instructor in 1996 and at the same time, carried out research in the area of polymer rheology in Prof. Michael Williams' lab. In 1997, he became an assistant professor and was promoted to the rank of full professor in 2006. In the 2003/2004 academic year, Prof. Choi spent a one year sabbatical in Prof. Wayne L. Mattice's lab of the Maurice Morton Institute of Polymer Science at the University of Akron studying crystallization behavior of polypropylene blends using the rotational isomeric state theory. Prof. Choi has supervised 9 postdoctoral fellows as well as 6 Ph.D., 8 M.Sc. and 30 B.Sc. theses over the past ten years.

Prof. Choi’s current research interests lie in the areas of molecular simulation of polymers, statistical thermodynamics of polymer solutions and blends, structure-property relationships of branched polyethylene and of block copolymers used in nanoscopic drug delivery systems and adsorption behaviour of polymer on inorganic surfaces. He has published over 100 book chapters, referred journal articles and conference proceedings and is constantly in demand as manuscript reviewer for major polymer and physical science journals and proposal reviewer for various Canadian and American funding agencies. Prof. Choi is also an active consultant to various multinational organizations on issues related to polymer product development. He is currently the chair of the Edmonton section of the Canadian Society for Chemical Engineering and a board of director of the Canadian Society for Chemical Engineering. He is a registered professional engineer in the province of Alberta.

Prof. Phillip Choi won the Faculty of Engineering Undergraduate Teaching Award and was named the McCalla Professorship in 2007 at the University of Alberta recognizing his dedication to undergraduate education. In particular, he has accumulated 13 years of experience teaching introductory polymer courses to senior undergraduate and first year graduate students. He received an international IUPAC Travel Award in 2002 and a National Young Innovator Award from Petro Canada Inc. in 2002 and 2001, respectively, recognizing his work on molecular simulation of polymers.

Users Review

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