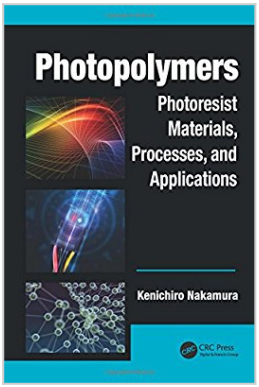

Photopolymers: Photoresist Materials, Processes, and Applications (Optics and Photonics)

By Kenichiro Nakamura

Photopolymers: Photoresist Materials, Processes, and Applications (Optics and Photonics) By Kenichiro Nakamura

Advancements in photopolymers have led to groundbreaking achievements in the electronics, print, optical engineering, and medical fields. At present, photopolymers have myriad applications in semiconductor device manufacturing, printed circuit boards (PCBs), ultraviolet (UV) curing, printing plates, 3-D printing, microelectromechanical systems (MEMS), and medical materials. Processes such as photopolymerization, photodegradation, and photocrosslinking, as well as lithography technology in which photofabrications are performed by images of photopolymers, have given rise to very large-scale integrated (VLSI) circuits, microproducts, and more.

Addressing topics such as chemically amplified resists, immersion lithography, extreme ultraviolet (EUV) lithography, and nanoimprinting, **Photopolymers: Photoresist Materials, Processes, and Applications** covers photopolymers from core concepts to industrial applications, providing the chemical formulae and structures of the materials discussed as well as practical case studies from some of the world's largest corporations. Offering a state-of-the-art review of progress in the development of photopolymers, this book provides valuable insight into current and future opportunities for photopolymer use.

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Editorial Review

Review

"... a toolbox for individuals needing practical knowledge in the area of photopolymers and photoresist materials. It contains practical guidance in chemistry, fabrication, and industrial reduction-to-practice of photopolymer technology. The volume is comprised of five chapters. A major theme of the book is the relationship between photopolymer technology and the increasing miniaturization of electronic and mechanical devices. ... This short book has enough material to give a novice a good start in the field of photopolymer technology. It is written at a level appropriate for individuals with a chemistry or polymer engineering background."
?Thomas M. Cooper, Materials and Manufacturing Directorate, Air Force Research Laboratory, Wright-Patterson Air Force Base, Ohio, USA, from *MRS Bulletin*, April 2015

"... fit for a chemist who wants to learn the physical principles of optical lithographic techniques."
?Dejan Panteli?, Institute of Physics, Belgrade, Serbia, from Optics & Photonics News, April 2015

About the Author

Kenichiro Nakamura graduated from Kanazawa University, Japan in 1963 and from the University of Tokyo, Japan in 1968 with his doctorate in engineering. He conducted his postdoctoral fellowship at the University of Texas at Austin, USA in 1968–1970. His experience also includes working for Prof. Albert Noyes in photochemistry; holding the positions of associate professor (1970–1978), professor (1978–2010), and honorary professor (2010–present) at Tokai University, Japan; and serving as editor-in-chief of the *Journal of Photopolymer Science and Technology* (1998–present). In addition to books, his work has been published in many prestigious journals.

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