



# Microelectronic Applications of Chemical Mechanical Planarization

Yuzhuo Li (Editor)

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## DESCRIPTION

An authoritative, systematic, and comprehensive description of current CMP technology

Chemical Mechanical Planarization (CMP) provides the greatest degree of planarization of any known technique. The current standard for integrated circuit (IC) planarization, CMP is playing an increasingly important role in other related applications such as microelectromechanical systems (MEMS) and computer hard drive manufacturing. This reference focuses on the chemical aspects of the technology and includes contributions from the foremost experts on specific applications. After a detailed overview of the fundamentals and basic science of CMP, *Microelectronic Applications of Chemical Mechanical Planarization*:

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Provides in-depth coverage of a wide range of state-of-the-art technologies and applications

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Presents information on new designs, capabilities, and emerging technologies, including topics like CMP with nanomaterials and 3D chips

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Discusses different types of CMP tools, pads for IC CMP, modeling, and the applicability of tribometry to various aspects of CMP

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Covers nanotopography, CMP performance and defect profiles, CMP waste treatment, and the chemistry and colloidal properties of the slurries used in CMP

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Provides a perspective on the opportunities and challenges of the next fifteen years

Complete with case studies, this is a valuable, hands-on resource for professionals, including process engineers, equipment engineers, formulation chemists, IC manufacturers, and others. With systematic organization and questions at the end of each chapter to facilitate learning, it is an ideal introduction to CMP and an excellent text for students in advanced graduate courses that cover CMP or related semiconductor manufacturing processes.

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## ABOUT THE AUTHOR

**YUZHUO LI** is a tenured professor in the Department of Chemistry and a member of the Center for Advanced Materials Processing (CAMP) at Clarkson University in Potsdam, New York. He is a member of the American Chemical Society, Chinese American Chemical Society, Materials Research Society, and The Electrochemical Society. He also holds guest professorships at several Chinese universities, including Yangzhou University and Sun Yat-Sen University.

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