



MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING

Functional Materials for (Opto)electronics, Sensors, Detectors, Biotechnology, and Green Energy.

AUTHOR INFORMATION PACK

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ISSN: 1369-8001

DESCRIPTION

Materials Science in Semiconductor Processing provides a unique forum for the discussion of novel processing, applications and theoretical studies of functional materials and devices for (opto)electronics, sensors, detectors, biotechnology and green energy.

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Coverage will include: advanced lithography for submicron devices; etching and related topics; ion implantation; damage evolution and related issues; plasma and thermal CVD; rapid thermal processing; advanced metallization and interconnect schemes; thin dielectric layers, oxidation; sol-gel processing; chemical bath and (electro)chemical deposition; compound semiconductor processing; new non-oxide materials and their applications; (macro)molecular and hybrid materials; molecular dynamics, ab-initio methods, Monte Carlo, etc.; new materials and processes for discrete and integrated circuits; magnetic materials and spintronics; heterostructures and quantum devices; engineering of the electrical and optical properties of semiconductors; crystal growth mechanisms; reliability, defect density, intrinsic impurities and defects.

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Materials Science in Semiconductor Processing provides a unique and much needed forum for the discussion of experimental and theoretical materials research stimulated by and applied to semiconductor processing.

Each issue will aim to provide a snapshot of current comprehension, new achievements, breakthroughs and future trends in such fields as ion implantation, diffusion and gettering, process and equipment modelling, metallization and interconnects, packaging, etc, which are the backbone of semiconductor device processing.

Coverage will include: advanced lithography for submicron devices; etching and related topics; ion implantation for dopant engineering; damage evolution and related issues; plasma and thermal CVD; rapid thermal processing; ultra low energy implantation: physics, limitations and perspectives; gettering procedures for ULSI; advanced metallization and interconnects schemes; thin dielectric layer, oxidation; cleaning procedures for ULSI devices; compound semiconductor processing; physical modelling of processing (ion implantation, metal deposition, oxidation, etching, etc.): molecular dynamics, ab-initio methods, Monte Carlo, etc.; new physical models in commercial simulation platforms for the design and modelling of advanced devices; equipment modelling; new materials and processes for discrete and integrated circuits; heterostructures and quantum devices; engineering of the electrical and optical the properties of semiconductors; crystal growth: mechanisms, reliability, defect density intrinsic impurities and defects.

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[3] W. Strunk Jr., E.B. White, *The Elements of Style*, fourth ed., Longman, New York, 2000.

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