
Hydrogen In Semiconductors

Ultrafast Physical Processes in Semiconductors

Hydrogen in Semiconductors II

A Survey and Analysis of Experimental Hydrogen Sensors

Defects in Silicon: Hydrogen

Solid-state Lighting Materials and Devices

Green Photocatalytic Semiconductors

Semiconductors

Fundamental Gas-phase and Surface Chemistry of Vapor-phase Deposition II and Process Control, Diagnostics and Modeling in

Semiconductor Manufacturing IV

Amorphous Silicon and Related Materials

Isotope Effects in Solid State Physics

Atomic Hydrogen Recombination and Catalysis by Molecules and Particles

Hydrogen in Semiconductors and Metals

Semiconductors and Semimetals

Quantum Efficiency in Complex Systems, Part II: From Molecular Aggregates to Organic Solar Cells

Identification of Defects in Semiconductors

Semiconductors for Room Temperature Nuclear Detector Applications

Hydrogenated Dilute Nitride Semiconductors

Processing and Properties of Compound Semiconductors

Light-Induced Defects in Semiconductors

GaN and Related Materials

C, H, N and O in Si and Characterization and Simulation of Materials and Processes

Defect and Impurity Engineered Semiconductors and Devices III: Volume 719

Hydrogen in Semiconductors

Light, Water, Hydrogen

Physical Chemistry of Semiconductor Materials and Processes

Deep Centers in Semiconductors
Photoelectrochemical Hydrogen Production
Topics in Growth and Device Processing of III-V Semiconductors
Hydrogen in Disordered and Amorphous Solids
Electrons in Metals and Semiconductors
Hydrogen in semiconductors : bulk and surface properties ; proceedings of the sixth Trieste IUPAP-ICTP Semiconductor Symposium,
International Centre for Theoretical Physics, Trieste, Italy, 27 - 31 August 1990
Hydrogen in Semiconductors
Hydrogen in Semiconductors
Chemistry of the Semiconductor Industry
Hydrogen in Compound Semiconductors
Nonlinear Optics in Semiconductors I
Hydrogen in Crystalline Semiconductors
Semiconductor Silicon
Hydrogen in Semiconductors

Hydrogen In Semiconductors

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CANTRELL LARSON

Ultrafast Physical Processes in Semiconductors CRC Press

This book comprises a detailed overview on the role of photocatalysts for environmental remediation, hydrogen production and carbon dioxide reduction. Effective ways to enhance the photocatalytic activity of the material via doping, hybrid material, laser light and nanocomposites have been discussed in this book. The book also further elaborates the role of metal nanoparticles, rare earth doping, sensitizers, surface oxygen vacancy, interface engineering and band gap engineering for enhancing the photocatalytic activity. An approach to recover

the photocatalytic material via immobilization is also presented. This book brings to light much of the recent research in the development of such semiconductor photocatalytic systems. The book will thus be of relevance to researchers in the field of: material science, environmental science & technology, photocatalytic applications, newer methods of energy generation & conversion and industrial applications.

Hydrogen in Semiconductors II Elsevier

This book covers the chemistry of the major processes involved in the manufacture of integrated circuits. The authors describe all the major processes in use, together with some interesting processes which are currently being developed and hold future promise. Each chapter covers the current state of knowledge of

the underlying chemistry of a particular process, and identifies areas of uncertainty requiring further research.

A Survey and Analysis of Experimental Hydrogen Sensors

The Electrochemical Society

This book describes advanced epitaxial growth and self-aligned processing techniques for the fabrication of III-V semiconductor devices such as heterojunction bipolar transistors and high electron mobility transistors. It is the first book to describe the use of carbon-doping and low damage dry etching techniques that have proved indispensable in making reliable, high performance devices. These devices are used in many applications such as cordless telephones and high speed lightwave communication systems.

Defects in Silicon: Hydrogen Springer Science & Business Media vgl. Hardcoverausgabe.

Solid-state Lighting Materials and Devices Springer

Hydrogen plays an important role in silicon technology, having a profound effect on a wide range of properties. Thus, the study of hydrogen in semiconductors has received much attention from an interdisciplinary assortment of researchers. This sixteen-chapter volume provides a comprehensive review of the field, including a discussion of hydrogenation methods, the use of hydrogen to passivate defects, the use of hydrogen to neutralize deep levels, shallow acceptors and shallow donors in silicon, vibrational spectroscopy, and hydrogen-induced defects in silicon. In addition to this detailed coverage of hydrogen in silicon, chapters are provided that discuss hydrogen-related phenomena in germanium and the neutralization of defects and dopants in III*b1V semiconductors. Provides the most in-depth coverage of

hydrogen in silicon available in a single source**Includes an extensive chapter on the neutralization of defects in III*b1V semiconductors**Combines both experimental and theoretical studies to form a comprehensive reference

Green Photocatalytic Semiconductors Academic Press

The present volume contains most of the papers presented at the Symposium A 'Defects in Silicon: Hydrogen'. The symposium took place at the 1998 Spring Meeting of the European Materials Research Society from June 16-19 1998, Strasbourg, France, and was devoted to the fundamental aspects of hydrogen in crystalline silicon and their influence on silicon technology. The two-and-a-half day scientific program included 13 invited and 35 contributed papers.

Semiconductors Elsevier

Sales of U.S. chemical sensors represent the largest segment of the multi-billion-dollar global sensor market, which includes instruments for chemical detection in gases and liquids, biosensors, and medical sensors. Although silicon-based devices have dominated the field, they are limited by their general inability to operate in harsh environments

Fundamental Gas-phase and Surface Chemistry of Vapor-phase Deposition II and Process Control, Diagnostics and Modeling in Semiconductor Manufacturing IV CRC Press

Since its inception in 1966, the series of numbered volumes known as Semiconductors and Semimetals has distinguished itself through the careful selection of well-known authors, editors, and contributors. The Willardson and Beer series, as it is widely known, has succeeded in producing numerous landmark volumes and chapters. Not only did many of these volumes make an

impact at the time of their publication, but they continue to be well-cited years after their original release. Recently, Professor Eicke R. Weber of the University of California at Berkeley joined as a co-editor of the series. Professor Weber, a well-known expert in the field of semiconductor materials, will further contribute to continuing the series' tradition of publishing timely, highly relevant, and long-impacting volumes. Some of the recent volumes, such as Hydrogen in Semiconductors, Imperfections in III/V Materials, Epitaxial Microstructures, High-Speed Heterostructure Devices, Oxygen in Silicon, and others promise that this tradition will be maintained and even expanded.

Amorphous Silicon and Related Materials CRC Press

Presents views on current developments in heat and mass transfer research related to the modern development of heat exchangers. Devotes special attention to the different modes of heat and mass transfer mechanisms in relation to the new development of heat exchangers design. Dedicates particular attention to the future needs and demands for further development in heat and mass transfer. GaN and related materials are attracting tremendous interest for their applications to high-density optical data storage, blue/green diode lasers and LEDs, high-temperature electronics for high-power microwave applications, electronics for aerospace and automobiles, and stable passivation films for semiconductors. In addition, there is great scientific interest in the nitrides, because they appear to form the first semiconductor system in which extended defects do not severely affect the optical properties of devices. This series provides a forum for the latest research in this rapidly-changing field, offering readers a basic understanding of new

developments in recent research. Series volumes feature a balance between original theoretical and experimental research in basic physics, device physics, novel materials and quantum structures, processing, and systems.

Isotope Effects in Solid State Physics Academic Press

Containing over 200 papers, this volume contains the proceedings of two symposia in the E-MRS series. Part I presents a state of the art review of the topic - Carbon, Hydrogen, Nitrogen and Oxygen in Silicon and in Other Elemental Semiconductors. There was strong representation from the industrial laboratories, illustrating that the topic is highly relevant for the semiconductor industry. The second part of the volume deals with a topic which is undergoing a process of convergence with two concerns that are more particularly application oriented. Firstly, the advanced instrumentation which, through the use of atomic force and tunnel microscopies, high resolution electron microscopy and other high precision analysis instruments, now allows for direct access to atomic mechanisms. Secondly, the technological development which in all areas of applications, particularly in the field of microelectronics and microsystems, requires as a result of the miniaturisation race, a precise mastery of the microscopic mechanisms.

Atomic Hydrogen Recombination and Catalysis by Molecules and Particles Academic Press

Since its inception in 1966, the series of numbered volumes known as Semiconductors and Semimetals has distinguished itself through the careful selection of well-known authors, editors, and contributors. The "Willardson and Beer" Series, as it is widely known, has succeeded in publishing numerous landmark volumes

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Hydrogen in Semiconductors and Metals CRC Press

This book presents the most recent important ideas and developments in the field of Hydrogenated Amorphous Silicon and related materials. Each contribution is authored by an outstanding expert in that particular area. Contents: Structural Aspects: Structural Heterogeneities in Device-Quality Amorphous Hydrogenated Semiconductors (J A Reimer & M A Petrich) Local Structure of Dopants in Hydrogenated Amorphous Silicon (J B

Boyce & S E Ready) Plasma Deposition of Amorphous and Crystalline Silicon: The Effect of Hydrogen on the Growth, Structure Electronic Properties (C C Tsai) Defects and Defect Dynamics: Thermal Equilibrium Effects in Doped Hydro-genated Amorphous Silicon (J Kakalios & R A Street) Kinetics of Carrier-Induced Metastable Defect Formation in Hydrogen Amorphous Silicon (W B Jackson & J Kakalios) Transient Photocapacitance Studies of Deep Defect Transitions in Hydrogenated Amorphous Silicon (J D Cohen & A V Gelatos) The Microscopic Structure of Defects in a-Si:H and Related Materials (M Stutzmann & D K Biegelsen) Electronic Transport, Trapping and Recombination: Transport and Tail State Interactions in Amorphous Silicon (W E Spear) Recombination in a-Si:H — Temperature and Field Quenching of the Photoluminescence (W Fuhs & K Jahn) Photo-luminescence in a-Si:H Films and Multilayers (W-C Wang & H Fritzsche) Amorphous Si-Ge Alloys: Optoelectronic Properties and the Gap State Distribution in a-Si, Ge Alloys (S Aljishi et al.) Multilayers and Interfaces: Differential Absorption Spectroscopy on Amorphous Silicon Quantum Well Structures (K Hattori et al.) Growth and Structure of Interfaces in a-Si:H/a-SiO_x and a-Si:H/a-SiN_x:H Multilayers and Heterojunctions (L Yang & B Abeles) and others Readership: Solid state physicists and electrical engineers.

Semiconductors and Semimetals Springer Nature

The nonlinear behavior of nitrogen and the passivation effect of hydrogen in dilute nitrides open the way to the manufacture of a new class of nanostructured devices with in-plane variation of the optical band gap. This book addresses the modifications of the electronic structure and of the optical and structural properties

induced in these technologically important semiconductors by atomic hydrogen irradiation. The book comprises discussions on experimental results from several techniques, enriched by state-of-the-art theoretical studies aimed at clarifying the origin of hydrogenation effects that lead to the discovery of specific nitrogen-hydrogen complexes. It presents techniques, such as infrared absorption spectroscopy, synchrotron radiation, and nuclear reaction analysis, which have indeed been crucial for addressing the physical origin of hydrogenation effects and their role in fine structural characterization. The book is not a simple assembly of the contributions of different groups on the subject; it rather tells the complete story of the amazing effects of hydrogen irradiation from the first observations to the discovery of their origin and to potential technology transfer. The primary scope of the book is to guide PhD students and new scientists into the field and to inspire similar analysis approaches in other fields.

Academic Press

Hydrogen in Semiconductors Academic Press

Quantum Efficiency in Complex Systems, Part II: From Molecular Aggregates to Organic Solar Cells Academic Press

State-of-the-art reviews on all the major areas of interest are brought together in this book, namely the role of hydrogen during epitaxial growth, its entry into the material during processing, its subsequent diffusivity and bonding with dopants, other impurities or defects, its effect on device performance and reliability and positive uses for hydrogen in passivating surfaces.

Identification of Defects in Semiconductors John Wiley & Sons

Since its inception in 1966, the series of numbered volumes

known as Semiconductors and Semimetals has distinguished itself through the careful selection of well-known authors, editors, and contributors. The "Willardson and Beer" Series, as it is widely known, has succeeded in publishing numerous landmark volumes and chapters. Not only did many of these volumes make an impact at the time of their publication, but they continue to be well-cited years after their original release. Recently, Professor Eicke R. Weber of the University of California at Berkeley joined as a co-editor of the series. Professor Weber, a well-known expert in the field of semiconductor materials, will further contribute to continuing the series' tradition of publishing timely, highly relevant, and long-impacting volumes. Some of the recent volumes, such as Hydrogen in Semiconductors, Imperfections in III/V Materials, Epitaxial Microstructures, High-Speed Heterostructure Devices, Oxygen in Silicon, and others promise that this tradition will be maintained and even expanded. Reflecting the truly interdisciplinary nature of the field that the series covers, the volumes in Semiconductors and Semimetals have been and will continue to be of great interest to physicists, chemists, materials scientists, and device engineers in modern industry.

Semiconductors for Room Temperature Nuclear Detector Applications Elsevier Science

Since its inception in 1966, the series of numbered volumes known as Semiconductors and Semimetals has distinguished itself through the careful selection of well-known authors, editors, and contributors. The "Willardson and Beer" Series, as it is widely known, has succeeded in publishing numerous landmark volumes and chapters. Not only did many of these volumes make an

impact at the time of their publication, but they continue to be well-cited years after their original release. Recently, Professor Eicke R. Weber of the University of California at Berkeley joined as a co-editor of the series. Professor Weber, a well-known expert in the field of semiconductor materials, will further contribute to continuing the series' tradition of publishing timely, highly relevant, and long-impacting volumes. Some of the recent volumes, such as *Hydrogen in Semiconductors*, *Imperfections in III/V Materials*, *Epitaxial Microstructures*, *High-Speed Heterostructure Devices*, *Oxygen in Silicon*, and others promise indeed that this tradition will be maintained and even expanded. Reflecting the truly interdisciplinary nature of the field that the series covers, the volumes in *Semiconductors and Semimetals* have been and will continue to be of great interest to physicists, chemists, materials scientists, and device engineers in modern industry. One of the first comprehensive works on room-temperature nuclear detectors Edited by technical experts in the field Written by recognized authorities from industrial and academic institutions Focused on the electrical, optical, and structural properties of semiconductors used for room-temperature nuclear detectors

Hydrogenated Dilute Nitride Semiconductors Springer Science & Business Media

The development of solid state devices began a little more than a century ago, with the discovery of the electrical conductivity of ionic solids. Today, solid state technologies form the background of the society in which we live. The aim of this book is threefold: to present the background physical chemistry on which the technology of semiconductor devices is based; secondly, to

describe specific issues such as the role of defects on the properties of solids, and the crucial influence of surface properties; and ultimately, to look at the physics and chemistry of semiconductor growth processes, both at the bulk and thin-film level, together with some issues relating to the properties of nano-devices. Divided into five chapters, it covers: Thermodynamics of solids, including phases and their properties and structural order Point defects in semiconductors Extended defects in semiconductors and their interactions with point defects and impurities Growth of semiconductor materials Physical chemistry of semiconductor materials processing With applications across all solid state technologies, the book is useful for advanced students and researchers in materials science, physics, chemistry, electrical and electronic engineering. It is also useful for those in the semiconductor industry.

Processing and Properties of Compound Semiconductors Academic Press

This is the second volume in the NATO ASI series dealing with the topic of hydrogen in solids. The first (V. B76, *Metal Hydrides*) appeared five years ago and focussed primarily on crystalline phases of hydrided metallic systems. In the intervening period, the amorphous solid state has become an area of intense research activity, encompassing both metallic and non-metallic, e.g. semiconducting, systems. At the same time the problem of storage of hydrogen, which motivated the first ASI, continues to be important. In the case of metallic systems, there were early indications that metallic glasses and disordered alloys may be more corrosion resistant, less susceptible to embrittlement by hydrogen and have a higher hydrogen mobility than ordered

metals or intermetallics. All of these properties are desirable for hydrogen storage. Subsequent research has shown that thermodynamic instability is a severe problem in many amorphous metal hydrides. The present ASI has provided an appropriate forum to focus on these issues.

Light-Induced Defects in Semiconductors World Scientific
Hydrogen on semiconductor surfaces has been an area of considerable activity over the last two decades. Structural, thermal, and dynamical properties of hydrogen chemisorbed on crystalline silicon and other semiconductors have been studied in great detail. These properties serve as a reference for related, but more complex systems such as hydrogen at multiple vacancies in crystalline semiconductors or at microvoids in amorphous samples. Interesting from a surface physics point of view is the fact that hydrogen as a monovalent element is an

ideal terminator for unsaturated bonds on surfaces and therefore tends to have a large influence on surface reconstruction. A related phenomenon with large technological impact (for example in low cost solar cells) is the passivation of grain boundaries in microcrystalline semiconductors. Finally, hydrogenated semiconductor surfaces always appear as a boundary layer during low-energy hydrogenation of bulk semiconductors, so that a complete description of hydrogen uptake or desorption necessarily has to take these surfaces into account. This collection of invited and contributed papers has been carefully balanced to deal with amorphous and crystalline semiconductors and surfaces and presents basic and experimental work (basic and applied) as well as theory. The resulting volume presents a summary of the state-of-the-art in the field of hydrogen in semiconductors and will hopefully stimulate future work in this area.

Best Sellers - Books :

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- [I Love You To The Moon And Back](#)
- [The Seven Husbands Of Evelyn Hugo: A Novel By Taylor Jenkins Reid](#)
- [Oh, The Places You'll Go! By Dr. Seuss](#)
- [The Complete Summer I Turned Pretty Trilogy \(boxed Set\): The Summer I Turned Pretty; It's Not Summer Without You; We'll Always](#)
- [House Of Flame And Shadow \(crescent City, 3\) By Sarah J. Maas](#)
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