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"**Retrospective Collection**" is a collection of books published from 1983 to 2004.

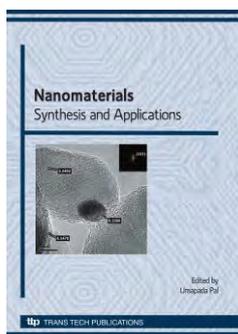
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**Nanomaterials Synthesis and Applications**

Volume in the series: 45

Edited by: Umapada Pal

The presented book under the edition of Prof. Umapada Pal (Institute of Physics, Autonomous University of Puebla, Mexico) collected articles that reflected the last trend and achievements in the synthesis and application of various nanomaterials actualized in the research studies of Mexican scientists.

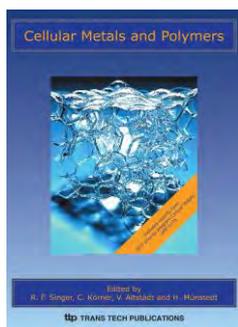
**Topics:** Materials Science

**Keywords:** Gold Nanoparticles, Semiconductors Sol-Gel Synthesis, TiO<sub>2</sub>-In<sub>2</sub>O<sub>3</sub> Semiconductors, TiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> Semiconductors

Prices: Print: **US\$ 193.00/ EUR 193.00**  
 eBook Single-User: **US\$ 193.00/ EUR 193.00**  
 eBook Multi-User: **US\$ 338.00/ EUR 338.00**

Print: 978-0-87849-331-9  
 eBook: 978-3-0357-0742-7  
 246 pages, 2009

<https://www.scientific.net/978-0-87849-331-9/book>



**Cellular Metals and Polymers**

Volume in the series: 44

**Proceedings of the Symposium on Cellular Metals and Polymers, sponsored by the Deutsche Forschungsgemeinschaft (DFG), held October 12 - 14, 2004, in Fürth, Germany, including reports from DFG priority program Cellular Metals (SPP 1075)**

Edited by: R.F. Singer, C. Körner, V. Altstädt and H. Münstedt

This collection constitutes an essential sourcebook for researchers, producers and users seeking technical information on materials with foam-like structures.

The collection is unique, in that it brings together people from the fields of metals and polymers. Both material types derive their advantageous properties from a cellular structure. These properties include: low weight, high specific stiffness and strength, excellent energy absorption capacity, as well as damping and insulation properties. On the other hand, the processing of metals is far more difficult due to the higher temperatures involved. Another important factor is the faster decay of metal foam structures, at the end of the foaming process, because of their combination of high surface tension and low viscosity. The differences in foamability, between metals and polymers, explain why cellular plastics have been widely used for some time whereas cellular metals have only recently found their first applications.

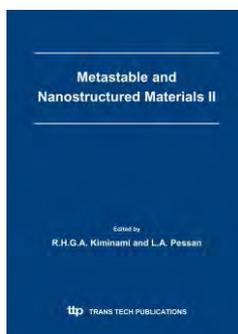
**Topics:** Materials Science

**Keywords:** Aluminum Foams, Energy Absorption Capacity, Foam-like Structures, Lattice Materials, Lotus-Type Porous Materials, Metallic Foams, Powders Metallurgy

Prices: Print: **US\$ 259.00/ EUR 259.00**  
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Print: 978-0-87849-491-0  
 eBook: 978-3-0357-0584-3  
 300 pages, 2005

<https://www.scientific.net/978-0-87849-491-0/book>



**Metastable and Nanostructured Materials II**

Volume in the series: 43

**Proceedings of the 2nd Workshop on Metastable and Nanostructured Materials (II NANOMAT 2003), Iguacu Falls, PR, Brazil, August 28-29, 2003**

Edited by: R.H.G.A. Kiminami and L.A. Pessan

The Second Workshop on Metastable and Nanostructured Materials was held in Iguacu Falls, Paraná State, Brazil, from August 28th to 29th, 2003. Following the successful First Workshop organized in 2001, II NANOMAT was organized in order to provide another Forum for discussions on Metastable and Nanostructured Materials. This main purpose of the Workshop was fully achieved, with the participation of researchers from countries both near and far: Argentina, Brazil, England, France, Japan, Mexico, Russia, Turkey and the USA

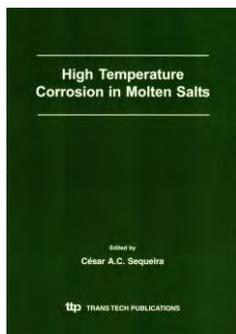
**Topics:** Materials Science

**Keywords:** Al-Fe-Si, Al-Si-Mg System, Aluminum Alloy, Ball Milling, Bulk Glassy Alloy, Carbon-13, Chalcogenide Glass, Clay, Nanocomposite, Transport Property

Prices: Print: **US\$ 116.00/ EUR 116.00**  
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Print: 978-0-87849-954-0  
 eBook: 978-3-0357-3991-6  
 116 pages, 2004

<https://www.scientific.net/978-0-87849-954-0/book>



**High Temperature Corrosion in Molten Salts**

Volume in the series: 42

Edited by: César A. C. Sequeira

Numerous commercial processes operate at temperatures exceeding 500 degrees Celsius. The materials used in high-temperature structures have design constraints which are in addition to those on materials used at, or near to, room temperature. These important additional constraints include time-dependent inelastic strain (creep), thermal stability of the microstructure and high-temperature corrosion. The addition of these constraints to those of low cost, strength, toughness, machinability, formability, weldability, and combinations of these, has led to the intensive development, over the past 50 years, of an extensive group of metallic materials: generally referred to as "high-temperature alloys".

**Topics:** Materials Science

**Keywords:** Ceramic, Chromium, Coating, Corrosion, Deposit, Electrochemical Potential Noise, Electrochemistry, Galvanic Corrosion, Heavy Metal Compounds, High Temperature Corrosion, Hot Corrosion, Molten Salt, Molten Salt Corrosion, Ni Alloys, Nickel Ni, Nitride, Stainless Steel (SS), Thin Film Hot Corrosion, Vanadium Pentoxide, Waste Incineration

Prices: Print: **US\$ 259.00/ EUR 259.00** Print: 978-0-87849-917-5  
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 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 364 pages, 2003

<https://www.scientific.net/978-0-87849-917-5/book>



**Advances in Jurassic Research 2000**

Volume in the series: 41

**Proceedings of the Fifth International Symposium on the Jurassic System, held in Vancouver, Canada, August 12-25, 1998**

Edited by: R.L. Hall and P.L. Smith

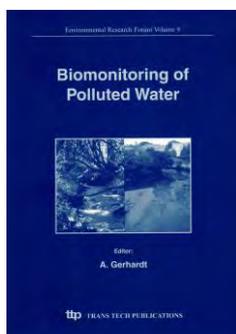
This book presents the proceedings of the 5th International Symposium on the Jurassic System. Special emphasis is given to Timescales and Correlation; Sequence Stratigraphy; Paleontology and Biogeography; and Terrestrial Ecosystems.

**Topics:** Materials Science

**Keywords:** Aalenian, Ammonites, Bajocian, Biostratigraphy, Chronostratigraphy, Correlation, Foraminifera, Hettangian, Kimmeridgian, Sequence Stratigraphy, Upper Jurassic

Prices: Print: **US\$ 215.00/ EUR 215.00** Print: 978-0-87849-844-4  
 eBook Single-User: **US\$ 198.00/ EUR 198.00** eBook: 978-3-0357-3989-3  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 576 pages, 1999

<https://www.scientific.net/978-0-87849-844-4/book>



**Biomonitoring of Polluted Water**

Volume in the series: 40

Edited by: A. Gerhardt

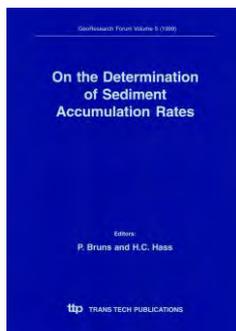
Biomonitoring of water pollution grew out of various disciplines, such as aquatic ecology and (eco)toxicology. It has now become a scientific tool for monitoring the degree of pollution of aquatic systems. The present book is a comprehensive review of the field. The most promising techniques used in the biomonitoring of polluted water are discussed in the light of their advantages and limitations.

**Topics:** Materials Science

**Keywords:** Aquatic Ecosystems, Bioindicators, Biomonitoring, Toxicology, Water Pollution

Prices: Print: **US\$ 160.00/ EUR 160.00** Print: 978-0-87849-845-1  
 eBook Single-User: **US\$ 160.00/ EUR 160.00** eBook: 978-3-0357-3990-9  
 eBook Multi-User: **US\$ 280.00/ EUR 280.00** 320 pages, 1999

<https://www.scientific.net/978-0-87849-845-1/book>



**On the Determination of Sediment Accumulation Rates**

Volume in the series: 39

Edited by: P. Bruns, H.C. Hass

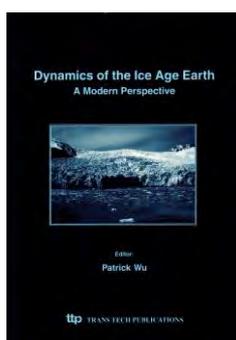
Sediment accumulation rates are an essential tool for the understanding of processes related to the deposition of organic and inorganic materials in marine and lacustrine environments. Sediment accumulation rates are not only a measure of the speed of deposition, but also represent a very useful tool for further paleoenvironmental reconstructions of climate history or biotic evolution as seen in the fossil record.

**Topics:** Materials Science

**Keywords:** Age-Depth Models, Alaskan Shelves and Lakes, Arctic Ocean, Bioturbation, Brownian Motion, Coccolithophore, Continental Margin, Holocene, IRD, Luminescence, Manganese Nodules, Mass Accumulation Rate, ODSN, Okhotsk Sea, Persistence, Quaternary, Reflection Seismics, Reworking, Sediment Export, Sedimentation Rate

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 eBook Single-User: **US\$ 160.00/ EUR 160.00** eBook: 978-3-0357-3988-6  
 eBook Multi-User: **US\$ 280.00/ EUR 280.00** 256 pages, 1999

<https://www.scientific.net/978-0-87849-837-6/book>



**Dynamics of the Ice Age Earth**

Volume in the series: 38

Edited by: Patrick Wu

Although the last Ice Age ended about ten thousand years ago, its effects are still influencing human activities today - for example: coastal engineering, siting of nuclear waste depositories, intraplate earthquake mitigation, inaccuracy of a global positioning due to changes in the Geodetic Reference Frame, etc.

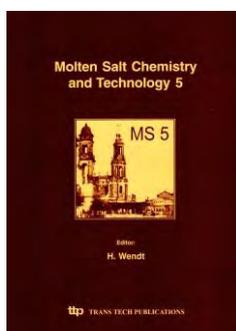
he recognition of Ice Ages and glacial isostasy led to the first scientific revolution in earth science. During the last few decades, studies of the Dynamics of the Ice Age Earth have brought together various disciplines - including geomorphology, geodynamics, rock and ice rheology, geodesy, glaciology, oceanography, climatology, astronomy, engineering and archeology. Recent interest in the subject has surged forward due to new advances in space-age geodetic techniques and new developments in modeling methods.

**Topics:** Materials Science

**Keywords:** Deformation, Diffusion Creep, Geopotential, Glacial Isostasy, Glacial Rebound, Global Positioning System (GPS), Holocene, Ice Rheology, Ice Sheet, Initial Stress, Mantle Rheology, Mantle Viscosity, Normal Modes, Postglacial Rebound, Relative Sea Levels, Rheology, Sea Level, Subsidence, Viscoelasticity, Viscosity

Prices: Print: **US\$ 209.00/ EUR 209.00** Print: 978-0-87849-810-9  
 eBook Single-User: **US\$ 198.00/ EUR 198.00** eBook: 978-3-0357-3987-9  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 656 pages, 1998

<https://www.scientific.net/978-0-87849-810-9/book>



**Molten Salt Chemistry and Technology 5**

Volume in the series: 37

**Proceedings of the 5th International Symposium on Molten Salt Chemistry and Technology (MS 5), Dresden, Germany, August 1997**

Edited by: H. Wendt

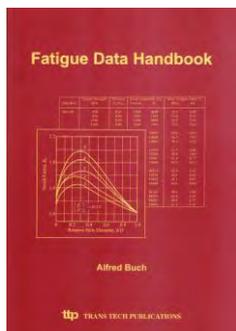
This fifth conference on Molten Salt Chemistry and Technology focused mainly on applied science and questions of technological concern, but also included aspects of fundamental research. The organizers moreover were careful to organize four special sessions on less conventional issues, namely: molten carbonate fuel cells, hot corrosion, slags and glass forming melts and low temperature melts.

**Topics:** Materials Science

**Keywords:** Aluminum (Al), Chloride Melts, Corrosion, Cyclic Voltametry (CV), Electro-Deposition, Electrolysis, Electrowinning, Fluoride, Hot Corrosion, Ionic Liquid (IL), MCFC, Molten Carbonate, Molten Carbonate Fuel Cell, Molten Salt, Molten Salt Electrolysis, Oxidation, Phase Diagram, Structure, Surface Tension, Viscosity

Prices: Print: **US\$ 319.00/ EUR 319.00** Print: 978-0-87849-805-5  
 eBook Single-User: **US\$ 198.00/ EUR 198.00** eBook: 978-3-0357-3986-2  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 656 pages, 1998

<https://www.scientific.net/978-0-87849-805-5/book>



**Fatigue Data Handbook**

Volume in the series: 36

Edited by: A. Buch

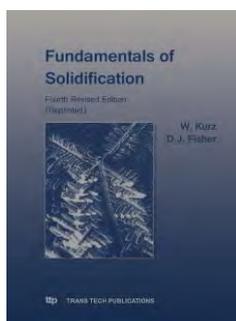
This authoritative handbook presents an extensive compilation of data covering all important fatigue situations - fatigue strength of steels and other materials, notch-, size-, and mean stress effects, influence of temperature and corrosion, influence of special surface treatments, fatigue of structural elements and welds, aircraft fatigue, multilevel loading test programs, fatigue performance prediction etc. As is well known, fatigue investigations are often extremely time-consuming. The results of the tests depend upon numerous factors, and therefore handbook data must include all of the parameters which affect reported test results. The calculation of fatigue life and strength cannot be performed without having appropriate information concerning the specific fatigue situation. Nor can test programs be properly prepared without knowing the service conditions and the results of previous tests as, otherwise, the results obtained cannot be generalized. Information on component fatigue behaviour is of importance not only to machine designers but also to production engineers in charge of component manufacture, since processing strongly affects fatigue strength, and to maintenance engineers in charge of the operation and repair of cyclically loaded machine elements.

**Topics:** Materials Science

**Keywords:** Corrosion, Fatigue, Fatigue Limits, Fatigue Strength Prediction, Notch Effect

Prices: Print: **US\$ 165.00/ EUR 165.00** Print: 978-0-87849-803-1  
 eBook Single-User: **US\$ 165.00/ EUR 165.00** eBook: 978-3-0357-3985-5  
 eBook Multi-User: **US\$ 289.00/ EUR 289.00** 352 pages, 1998

<https://www.scientific.net/978-0-87849-803-1/book>



**Fundamentals of Solidification**

Volume in the series: 35

Edited by: Dr. W. Kurz and Dr. David Fisher

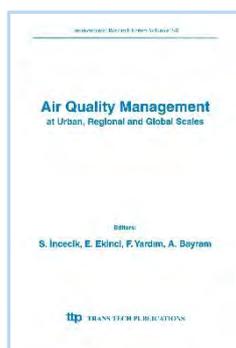
Solidification phenomena play an important role in many of the processes used in fields ranging from production engineering to solid-state physics. The broad range of applications of solidification models - from the large tonnages of continuously cast products, through superalloy precision castings, to high-purity single crystals - means that a book such as the present one must cater for the requirements of a very wide range of readers.

**Topics:** Materials Science

**Keywords:** Dendrites, Precision Casting, Solidification, Solid-State Physics, Solute Redistribution, Superalloys

Prices: Print: **US\$ 165.00/ EUR 165.00** Print: 978-0-87849-804-8  
 eBook Single-User: **US\$ 165.00/ EUR 165.00** eBook: 978-3-0357-3239-9  
 eBook Multi-User: **US\$ 289.00/ EUR 289.00** 316 pages, 1998

<https://www.scientific.net/978-0-87849-804-8/book>



**Air Quality Management**

Volume in the series: 34

**Proceedings of the 10th Regional IUAPPA Conference on Air Quality Management (IUAPPA-10), Gümüşsuyu, Istanbul, Turkey, September 1997**

Edited by: S. Incecik, E. Ekinci, F. Yardim, A. Bayram

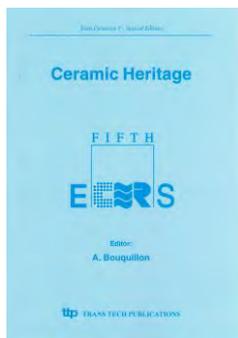
In recent years, Air Quality Management has become of major importance, especially in megacities, i.e. those with more than 10 million inhabitants. The present publication provides scientists and engineers working in this area with the most recent results touching all major aspects of this highly important field.

**Topics:** Materials Science

**Keywords:** Air Pollution, Air Quality, Air Quality Management, Atmospheric Boundary Layer, Cement, Dry Deposition, Emission, Emission Inventory, Forest, Health Effect, Heavy Metal, Mediation, Ozone, PAH, PCB, Pollution, Purification, Sodar, Sustainable Urban Development, Trace Elements

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 eBook Single-User: **US\$ 198.00/ EUR 198.00** eBook: 978-3-0357-3984-8  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 744 pages, 1997

<https://www.scientific.net/978-0-87849-772-0/book>



**Ceramic Heritage**

Volume in the series: 33

**Proceedings of Session 4 of the 5th Conference and Exhibition of the European Ceramic Society (ECERS V), Versailles, France, June 1997**

Edited by: A. Bouquillon

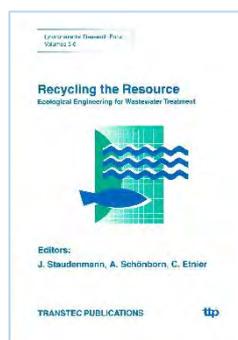
This book comprises the Proceedings of Session 4 of the 5th Conference and Exhibition of the European Ceramic Society, Versailles, France, June 1997. Herein, 22 papers treat various aspects of the subject and cover a wide range of historical and geographical information.

**Topics:** Materials Science

**Keywords:** Acre, Alteration, Ceramic, EDS, Glaze, Scanning Electron Microscope (SEM)

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 eBook Single-User: **US\$ 164.00/ EUR 164.00** eBook: 978-3-0357-3983-1  
 eBook Multi-User: **US\$ 287.00/ EUR 287.00** 82 pages, 1997

<https://www.scientific.net/978-0-87849-765-2/book>



**Recycling the Resource**

Volume in the series: 32

**Proceedings of the Second International Conference on Ecological Engineering for Wastewater Treatment, held in Wädenswil - Zürich, September 1995**

Edited by: J. Staudenmann, A. Schönborn, C. Etnier

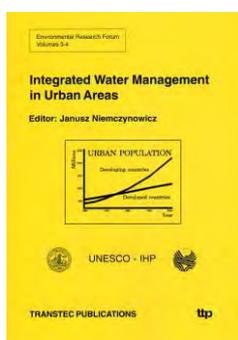
This book focuses on treatment approaches that include a recycling loop for the water, nutrients, energy, and other resources in wastewater. The preliminary indications are that decentralized, re-circulating systems for wastewater treatment can be significantly cheaper than the building and maintaining of conventional systems.

**Topics:** Materials Science

**Keywords:** Aquaculture, Biomass, Constructed Wetland, Duckweed, Ecological Engineering, Human Urine, Hygiene, Land Treatment, Natural System, Nitrogen, Nutrient, Nutrient Recycling, Phosphorus, Plant Production, Recycling, Sewage, Sewage Sludge, Social Aspects, Wastewater, Wastewater Treatment

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 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 500 pages, 1996

<https://www.scientific.net/978-0-87849-741-6/book>



**Integrated Water Management in Urban Areas**

Volume in the series: 31

**Proceedings of the International Symposium on Integrated Water Management in Urban Areas, held in Lund, Sweden, September 1995**

Edited by: Janusz Niemczynowicz

The continuing growth of urban populations throughout the world is one of the most frightening problems of today. The problems of megacities, i.e. those with more than 10 million inhabitants and which are growing fastest in developing countries, must be fully recognized within the context of the world environment.

**Topics:** Materials Science

**Keywords:** Developing Countries, Dry Sanitation, Economic Management, Environment Protection, Flooding, Geographical Information System (GIS), Integrated Water Management, Management, Mathematical Models, Modeling, Population Increase, Stormwater Infiltration, Urban Areas, Urban Growth, Wastewater Treatment, Water Management, Water Pollution, Water Quality Management, Water Storage, Water Supply

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 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 492 pages, 1996

<https://www.scientific.net/978-0-87849-736-2/book>



### Applications of Artificial Intelligence

Volume in the series: 30

#### Proceedings of the 7th Portuguese Conference on Artificial Intelligence, held in Funchal, Madeira Island, Portugal, October 1995

Edited by: Nuno J. Mamede and Carlos Pinto-Ferreira

This volume reviews the most recent developments in the fields of Expert Systems, Robots and Vision Systems, Fuzzy Logic and Neural Networks.

**Topics:** Materials Science

**Keywords:** Artificial Intelligence (AI), Back-Propagation, Computer Vision, Decision Support System (DSS), Expert System, Neural Network (NN), Visual Servoing

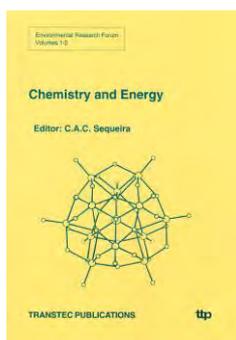
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304 pages, 1996

<https://www.scientific.net/978-3-908450-17-7/book>



### Chemistry and Energy

Volume in the series: 29

#### Proceedings of the 2nd European East-West Workshop on Chemistry and Energy, held in Sintra, Portugal, March 1995

Edited by: C.A.C. Sequeira

The present volume is a collection of papers written by leading experts who are active in the pivotal roles played by chemists in the energy industry and its impact on society. Covered here are the areas of chemistry, physics, materials science, electrochemistry, energy research, electrical engineering and battery manufacture.

**Topics:** Materials Science

**Keywords:** Binary Mixtures, Bipolar Membrane, Coal Liquefaction, Conductivity, Electrolytic Industries, Energy, Extract, Fission Products, High-Temperature, Ignition, Intermetallic, Molten Salt, Numerical Simulation, Phase-Domain Size, Photoelectrosynthetic Cell, Polymer Electrolyte, Reprocessing, Residue, Sulphuric Acid Process, V<sub>2</sub>O<sub>5</sub>

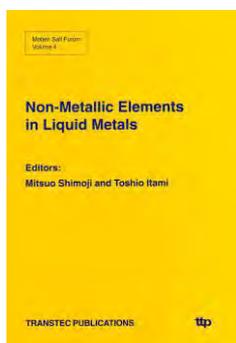
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Print: 978-0-87849-724-9

eBook: 978-3-0357-3980-0

448 pages, 1996

<https://www.scientific.net/978-0-87849-724-9/book>



### Non-Metallic Elements in Liquid Metals

Volume in the series: 28

Edited by: M. Shimoji and T. Itami

The purpose of this book is to discuss the properties of non-metallic elements, when dissolved as a minor impurity in liquid metals and alloys, in terms of statistical thermodynamics, quantum mechanics and the latest structural models. The behaviour of non-metallic elements in liquid metals is one of the most important problems in metallurgical and physical chemistry, since it plays a central role in the manufacture of metallic materials.

**Topics:** Materials Science

**Keywords:** Electron Theory, Liquid Metals, Metallic Bonding, Non-Metallic Elements, Thermodynamics

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Print: 978-0-87849-711-9

eBook: 978-3-0357-3978-7

264 pages, 1996

<https://www.scientific.net/978-0-87849-711-9/book>



**Advances in Jurassic Research**

Volume in the series: 27

Edited by: A.C. Riccardi

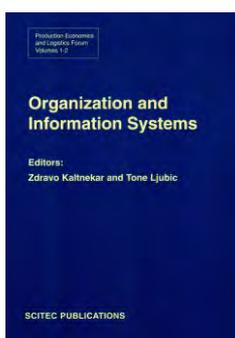
Research in the field of Jurassic Stratigraphy has been increasingly active up to the present time. The aim of this volume is to present new results as well as to suggest areas for further research work and new and/or different stratigraphical tools, such as Sequence Stratigraphy. Formal questions on Jurassic Stratigraphy are also discussed, such as fine definitions of the boundaries of stages, series and of the system itself.

**Topics:** Materials Science

**Keywords:** Ammonites, Ammonitina, Ammonoids, Argentina, Biostratigraphy, Chronostratigraphy, Cuyo Group, Early Mesozoic, Indo-East-African Province, Jurassic, Kachchh, Late Jurassic, Middle Jurassic, Neuquén Basin, Paleobiogeography, Rifting, Sequence Stratigraphy, Stratigraphy, Tithonian, Upper Jurassic

Prices: Print: **US\$ 209.00/ EUR 209.00** Print: 978-0-87849-717-1  
 eBook Single-User: **US\$ 198.00/ EUR 198.00** eBook: 978-3-0357-3979-4  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 508 pages, 1996

<https://www.scientific.net/978-0-87849-717-1/book>



**Organization and Information Systems**

Volume in the series: 26

**Proceedings of the International Conference on Organization and Information Systems held in Bled, Slovenia, September 1995**

Edited by: Zdravko Kaltnekar and Tone Ljubic

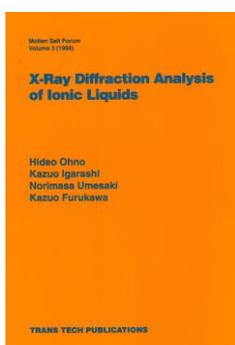
Recently, a strong correlation has been felt between the progressing abilities of information technology and the needs of organizations to link all their activities into a working system.

**Topics:** Materials Science

**Keywords:** Data Selection, Employees Development, Employees Selection, Horticulture, Human Resource Development, Information, Information Overload, Information Strategy, Information System, Intensive Health Care, Management, Measures Issues, MIS, Organisation, Simulation, Slovenia, Social Sciences, Special Libraries, Supply Chain, Utility Evaluation Methods

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 eBook Single-User: **US\$ 198.00/ EUR 198.00** eBook: 978-3-0357-3992-3  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 500 pages, 1995

<https://www.scientific.net/978-3-908450-15-3/book>



**X-Ray Diffraction Analysis of Ionic Liquids**

Volume in the series: 25

Edited by: H. Ohno, K. Igarashi, N. Umesaki and K. Furukawa

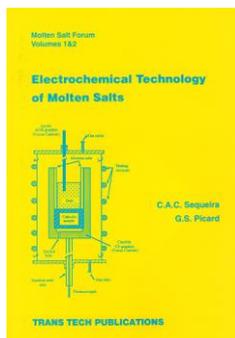
Materials such as molten salts and liquid metals have become more and more important in the field of nuclear engineering, solar and thermal energy, fuel cells and related fields. The physical properties of molten salts are closely related to their ionic liquid structure and it is essential to know this structure for the systematic understanding of the physical properties.

**Topics:** Materials Science

**Keywords:** Halides, Ionic Liquids, Liquid Metals, Molten Salts, Solar Thermal Energy, X-Ray Diffraction Analysis

Prices: Print: **US\$ 187.00/ EUR 187.00** Print: 978-0-87849-676-1  
 eBook Single-User: **US\$ 187.00/ EUR 187.00** eBook: 978-3-0357-3977-0  
 eBook Multi-User: **US\$ 327.00/ EUR 327.00** 236 pages, 1994

<https://www.scientific.net/978-0-87849-676-1/book>



**Electrochemical Technology of Molten Salts**

Volume in the series: 24

**European Workshop on Electrochemical Technology of Molten Salts, Sintra, Portugal, March 1993**

Edited by: C.A.C. Sequeira and G.S. Picard

During the past several years there has been remarkable interest and activity in two fields of the fused salt chemistry, namely Molten Salt Extractive Metallurgy and High-Temperature Fuel Cells. The required fundamental investigations for improving industrial processes are necessarily devoted to all aspects of the reactivity in molten salts. Therefore, most of the relevant disciplines are represented here: electrochemistry, spectroscopy and computer modelling.

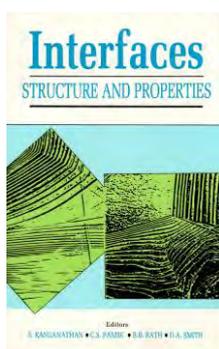
**Topics:** Materials Science

**Keywords:** Activity Coefficient of  $Y_2O_3$ , Alkali Chloride, Aluminum (Al), Chloride Melts, Corrosion, Electrochemistry, Electrolysis, Experiment, Melts, Micelle, Molten Carbonate, Molten Carbonate Fuel Cell, Molten Chlorides, Molten Salt, Molybdenum, Oxide Ion, Oxide-Chloride Melt, Oxygen Reduction, Raman Spectroscopy, Titanium (Ti)

Prices: Print: **US\$ 325.00/ EUR 325.00**  
 eBook Single-User: **US\$ 198.00/ EUR 198.00**  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00**

Print: 978-0-87849-669-3  
 eBook: 978-3-0357-3976-3  
 442 pages, 1993

<https://www.scientific.net/978-0-87849-669-3/book>



**Interfaces - Structure and Properties**

Volume in the series: 23

Edited by: S. Ranganathan, C.S. Pande, B.B. Rath and D.A. Smith

The behaviour of many materials critically depends on processes at interfaces and surfaces. This volume presents up-to-date reviews on atomic structure and properties of interfaces.

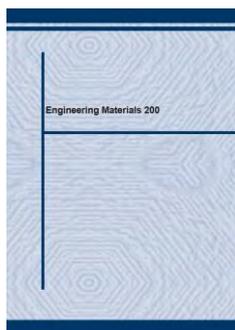
**Topics:** Materials Science

**Keywords:** Atomic Structure, Density Wave Theory, Flux Pinning, Misorientation, Niobium Bicrystals, Surface, Twinning

Prices: Print: **US\$ 215.00/ EUR 215.00**  
 eBook Single-User: **US\$ 198.00/ EUR 198.00**  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00**

Print: 978-0-87849-613-6  
 eBook: 978-3-0357-3974-9  
 400 pages, 1993

<https://www.scientific.net/978-0-87849-613-6/book>



**Engineering Materials 200**

Volume in the series: 22

Edited by: J.D. Watson

To commemorate Australia's Bicentenary year in 1988, a special volume was published, containing research and review papers by leading authorities from all over the world. The book focusses on the mechanical behaviour of engineering materials.

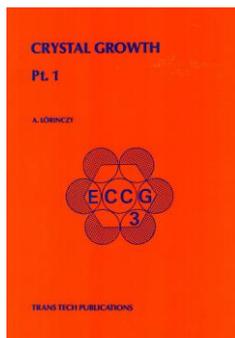
**Topics:** Materials Science, Mechanics

**Keywords:** Composites, Crystallization, Fe-Based Metallic Glasses, Fine Ceramic Fibres, Heat Treated Ferromagnetic, High Temperature Composites, Mechanical Behaviour, Oriented Polymers, Shock Mitigating Foams, Y-Ba-Cu-O Superconductors, Zirconia Toughened Ceramic

Prices: Print: **US\$ 270.00/ EUR 270.00**  
 eBook Single-User: **US\$ 198.00/ EUR 198.00**  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00**

Print: 978-0-87849-578-8  
 eBook: 978-3-0357-3969-5  
 380 pages, 1988

<https://www.scientific.net/978-0-87849-578-8/book>



**Crystal Growth**

Volume in the series: 21

**Proceedings of the 3rd European Conference on Crystal Growth, Budapest, Hungary, May 1991**

Edited by: A. Lőrinczy

This 2-volume set presents 12 invited state-of-the-art papers (volume 1) and a collection of 75 contributed papers on topics of current interest (volume 2).

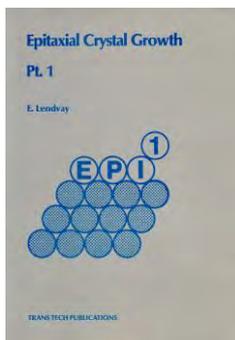
**Topics:** Materials Science

**Keywords:** Electron Diffraction, Growth Inhibitors, Growth of II-VI Compounds, Growth Promoters, Liquid Zone Transport, Organic Crystal, Quasicrystal, Silicon Crystal Growth

Prices: Print: **US\$ 539.00/ EUR 539.00**  
 eBook Single-User: **US\$ 198.00/ EUR 198.00**  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00**

Print: 978-0-87849-545-0  
 eBook: 978-3-0357-0829-5  
 932 pages, 1991

<https://www.scientific.net/978-0-87849-545-0/book>



**Epitaxial Crystal Growth**

Volume in the series: 20

**Proceedings of the 1st International Conference on Epitaxial Crystal Growth, Budapest, Hungary, April 1990**

Edited by: E. Lendvay

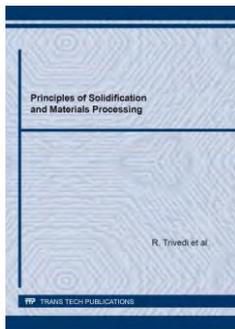
The importance of epitaxial growth has grown substantially since the early application of semiconductor systems. At present metals, high Tc superconductors, garnets, optical materials and numerous systems grown epitaxially are known.

**Topics:** Materials Science

**Keywords:** Crystal Growth, Epitaxial Systems, Garnets, Optical Materials, Semiconductors

Prices: Print: **US\$ 512.00/ EUR 512.00** Print: 978-0-87849-616-7  
 eBook Single-User: **US\$ 198.00/ EUR 198.00** eBook: 978-3-0357-3975-6  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 1010 pages,  
 1991

<https://www.scientific.net/978-0-87849-616-7/book>



**Principles of Solidification and Materials Processing**

Volume in the series: 19

**Proceedings of an Indo-US Workshop on Principles of Solidification and Materials Processing, Hyderabad, 1988**

Edited by: R. Trivedi et al.

A collection of 60 invited contributions covering the important area of solidification and materials processing.

**Topics:** Materials Science

**Keywords:**

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 eBook Single-User: **US\$ 198.00/ EUR 198.00** eBook: 978-3-0357-3972-5  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 980 pages, 1990

<https://www.scientific.net/978-0-87849-594-8/book>



**Gallium Arsenide III**

Volume in the series: 18

**Proceedings of the 3rd International Conference on Physics & Technology of GaAs and other III-V Semiconductors, Lomnica, CSFR, December 1988**

Edited by: P. Kordos

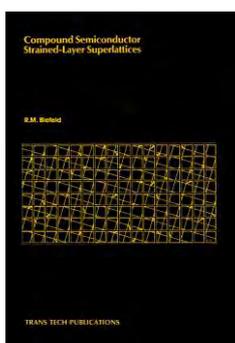
This issue is based on proceedings of the 3rd International Conference on Physics and Technology of GaAs and other III-V Semiconductors, Lomnica, CSFR, December 1988. The collected articles present research results in studies of crystal properties and preparation methods of gallium arsenide and the use of gallium arsenide as a semiconductor compound with high electron mobility.

**Topics:** Materials Science

**Keywords:** Crystal Properties, Diffusion, Epitaxial Growth, Gallium Arsenide, Ion Implantation, Semiconductor, Thin Film

Prices: Print: **US\$ 215.00/ EUR 215.00** Print: 978-0-87849-586-3  
 eBook Single-User: **US\$ 198.00/ EUR 198.00** eBook: 978-3-0357-3970-1  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00** 380 pages, 1989

<https://www.scientific.net/978-0-87849-586-3/book>



**Compound Semiconductor Strained-Layer Superlattices**

Volume in the series: 17

Edited by: R.M. Biefeld

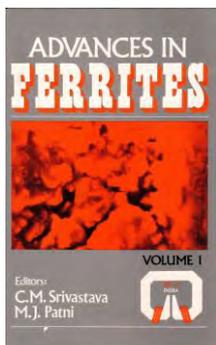
- Effect of Internal Piezoelectric Fields on the Electronic Structure and Optical Properties of Strained-Layer Superlattices
- Metastability in Semiconductor Strained-Layer Structures
- The Morphology of MOCVD-Grown Semiconductor Multilayers
- Electrical Transport Studies of InGaAs/GaAs Strained-Layer Quantum-Well Structures
- Device Structures Based on GaAsP/InGaAs Strained Layer Superlattices and Their Stability
- The Preparation and Infrared Properties of In (AsSb) Strained-Layer Superlattices
- Ion Implantation of III-V Compound Semiconductor Strained-Layer Semiconductor Systems
- II-VI Strained-Layer Semiconductor Superlattices

**Topics:** Materials Science

**Keywords:** Electronic Structure, Infrared Property, Ion Implantation, Morphology, Semiconductor, Superlattices

Prices: Print: **US\$ 165.00/ EUR 165.00** Print: 978-0-87849-587-0  
 eBook Single-User: **US\$ 165.00/ EUR 165.00** eBook: 978-3-0357-3971-8  
 eBook Multi-User: **US\$ 289.00/ EUR 289.00** 238 pages, 1989

<https://www.scientific.net/978-0-87849-587-0/book>



**Ferrites**

Volume in the series: 16

**Proceedings of the 5th International Conference on Ferrites, Bombay, India, 1989**

Edited by: C. M. Srivastava

Following the successful conferences in Kyoto (1970 & 1980), Bellevue (1976) and San Francisco (1984), this 5th conference on Ferrites covers the following subjects:

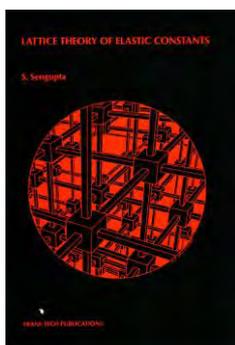
**Topics:** Materials Science

**Keywords:**

Prices: Print: **US\$ 594.00/ EUR 594.00**  
 eBook Single-User: **US\$ 198.00/ EUR 198.00**  
 eBook Multi-User: **US\$ 347.00/ EUR 347.00**

Print: 978-0-87849-595-5  
 eBook: 978-3-0357-3973-2  
 1280 pages,  
 1989

<https://www.scientific.net/978-0-87849-595-5/book>



**Lattice Theory of Elastic Constants**

Volume in the series: 15

Edited by: S. Sengupta

30 Years after the appearance of the classic book by Born and Huang on the Dynamical Theory of Crystal Lattices, the present volume undertakes to present the field in the light of the extensive progress that has been made in the last three decades.

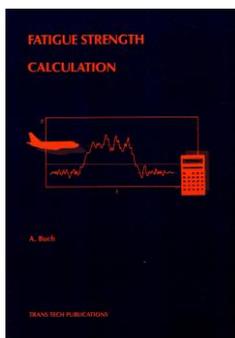
**Topics:** Materials Science

**Keywords:** Anisotropic Solids, Composite Materials, Crystal Lattices, Crystals, Elastic Constant, Elastic Constants, Lattice Theory, Polycrystalline Aggregates

Prices: Print: **US\$ 193.00/ EUR 193.00**  
 eBook Single-User: **US\$ 193.00/ EUR 193.00**  
 eBook Multi-User: **US\$ 338.00/ EUR 338.00**

Print: 978-0-87849-564-1  
 eBook: 978-3-0357-3968-8  
 252 pages, 1988

<https://www.scientific.net/978-0-87849-564-1/book>



**Fatigue Strength Calculation**

Volume in the series: 14

Edited by: A. Buch

Optimal design using advanced materials is an ever more progressive and challenging domain within applied mechanics. Here is an invaluable self-contained source of information concerning methods of calculation of fatigue limits and lifetimes of structural elements.

While in most texts the treatment of this subject is confined merely to a phenomenological approach, this book provides the essential knowledge for an analytical treatment of design problems as well as a unique collection of appropriate data sheets which are required for the quantitative application of accepted design recommendations.

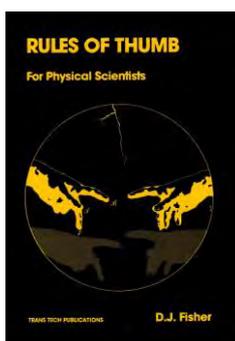
**Topics:** Materials Science

**Keywords:** Analytical Treatment, Applied Mechanics, Fatigue Strength, Lifetimes of Structural Elements

Prices: Print: **US\$ 187.00/ EUR 187.00**  
 eBook Single-User: **US\$ 187.00/ EUR 187.00**  
 eBook Multi-User: **US\$ 327.00/ EUR 327.00**

Print: 978-0-87849-536-8  
 eBook: 978-3-0357-3963-3  
 478 pages, 1988

<https://www.scientific.net/978-0-87849-536-8/book>



**Rules of Thumb for the Physical Scientist**

Volume in the series: 13

Edited by: Dr. David Fisher

This book collects together the many simple empirical correlations which have been observed between diverse properties. These correlations are of invaluable help in estimating unknown properties and in forecasting the likely properties of unknown systems.

**Topics:** Materials Science

**Keywords:** Forecasting, Ion Beam Devices, Organic Compounds, Prediction of Sweetness, Semiconductor Heterostructures, Superconductivity

Prices: Print: **US\$ 127.00/ EUR 127.00**  
 eBook Single-User: **US\$ 127.00/ EUR 127.00**  
 eBook Multi-User: **US\$ 222.00/ EUR 222.00**

Print: 978-0-87849-524-5  
 eBook: 978-3-0357-3958-9  
 320 pages, 1988

<https://www.scientific.net/978-0-87849-524-5/book>



### Gallium Arsenide II

Volume in the series: 12

#### Proceedings of the 2nd International Conference on Physics & Technology of GaAs and other III-V Semiconductors, Budapest, Hungary, 1986

Edited by: E. Lendvay

Gallium Arsenide presents 63 important papers given at the second international conference on the Physics and Technology of GaAs and other III-V Compounds, held in Budapest, Hungary, Sept. 1986. The wealth of new information presented at the conference focused on the following research areas:

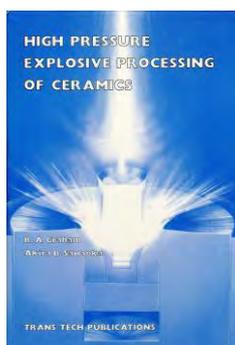
**Topics:** Materials Science

**Keywords:** Gallium Arsenide (GaAs), III-V Compounds, Physics of Gallium Arsenide, Technology of Gallium Arsenide

Prices: Print: **US\$ 215.00/ EUR 215.00**  
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 eBook Multi-User: **US\$ 347.00/ EUR 347.00**

Print: 978-0-87849-555-9  
 eBook: 978-3-0357-3967-1  
 374 pages, 1987

<https://www.scientific.net/978-0-87849-555-9/book>



### High Pressure Explosive Processing of Ceramics

Volume in the series: 11

Edited by: R.A. Graham and Akira B. Sawaoka

This edition is dedicated to researching the effect of high-pressure explosive compaction of ceramics powder on the process of binderless sintering and the properties of resulting functional ceramic materials.

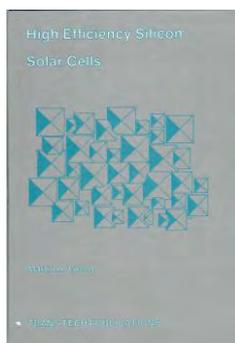
**Topics:** Materials Science

**Keywords:** Ceramics, Explosive Compaction, Microstructure, Powder Metallurgy, Shock Modification, Sintering

Prices: Print: **US\$ 226.00/ EUR 226.00**  
 eBook Single-User: **US\$ 198.00/ EUR 198.00**  
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Print: 978-0-87849-546-7  
 eBook: 978-3-0357-3966-4  
 410 pages, 1987

<https://www.scientific.net/978-0-87849-546-7/book>



### High Efficiency Silicon Solar Cells

Volume in the series: 10

Edited by: Martin A. Green

The early chapters comprehensively review the optical and transport properties of silicon. Light trapping is described in detail. Limits on the efficiency of silicon cells are discussed as well as material requirements necessary to approach these limits. The status of current approaches to passivating surfaces, contacts and bulk regions is reviewed. The final section of the book describes the most practical approaches to the fabrication of high-efficiency cells capable of meeting the efficiency targets for both concentrated and non-concentrated sunlight, including a discussion of design and processing approaches for non-crystalline silicon.

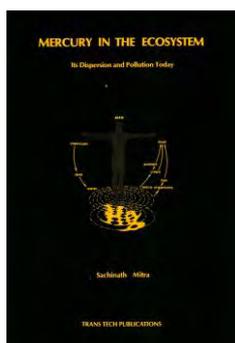
**Topics:** Materials Science

**Keywords:** Carrier Transport, Energy Bands, Light Trapping, Non-Crystalline Silicon, Optical Properties, Phonon Spectra, Polycrystalline Silicon, Terrestrial Cells

Prices: Print: **US\$ 165.00/ EUR 165.00**  
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 eBook Multi-User: **US\$ 289.00/ EUR 289.00**

Print: 978-0-87849-537-5  
 eBook: 978-3-0357-3964-0  
 240 pages, 1987

<https://www.scientific.net/978-0-87849-537-5/book>



### Mercury in the Ecosystem

Volume in the series: 9

Edited by: S. Mitra

This comprehensive treatise on the environmental dispersion of mercury emphasizes the importance of "mercury-consciousness" in the present-day world, where rapidly expanding metallurgical, chemical, and other industrial developments are causing widespread contamination of the atmosphere, soil, and water by this metal and its toxic organic derivatives.

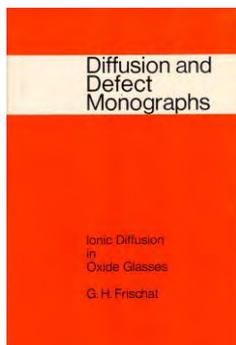
**Topics:** Materials Science

**Keywords:** Ecosystem, Environmental, Mercury, Mercury Applications, Mercury-Consciousness, Soil Contamination, Water Contamination

Prices: Print: **US\$ 187.00/ EUR 187.00**  
 eBook Single-User: **US\$ 187.00/ EUR 187.00**  
 eBook Multi-User: **US\$ 327.00/ EUR 327.00**

Print: 978-0-87849-529-0  
 eBook: 978-3-0357-3962-6  
 340 pages, 1986

<https://www.scientific.net/978-0-87849-529-0/book>



**Ionic Diffusion in Oxide Glasses**

Volume in the series: 8

Edited by: G. H. Frischat

This monograph presents a comprehensive and critical review of the 1074 published work on self-diffusion and chemical diffusion in oxide glasses. Where possible, the results on glasses are compared with those of the corresponding crystalline phases. Other ionic transport processes were also described, like electrical conductivity, dielectric relaxation, or internal friction.

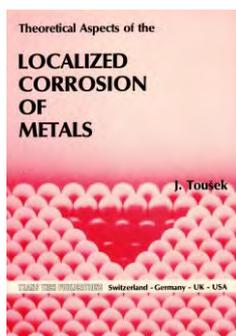
**Topics:** Materials Science

**Keywords:** Activation Energy, Annealing, Chemical Diffusion, Crystalline Quartz, Fick's Laws, Interdiffusion, Ionic Transport, Multicomponent Diffusion, Oxide Glass, Self-Diffusion, Silicate Glass, Surface Properties

Prices: Print: **US\$ 160.00/ EUR 160.00**  
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Print: 978-0-87849-503-0  
 eBook: 978-3-0357-3955-8  
 188 pages, 1985

<https://www.scientific.net/978-0-87849-503-0/book>



**Theoretical Aspects of the Localized Corrosion of Metals**

Volume in the series: 7

Edited by: J. Tousek

A consistent theory is developed for predicting the incidence of localized corrosion and, most importantly, for the prediction of those substances which should be useful in inhibiting the process.

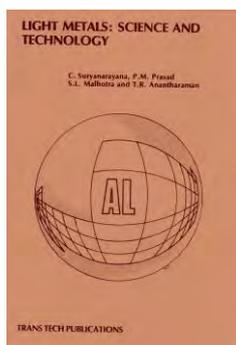
**Topics:** Materials Science

**Keywords:** Corrosion, Corrosion Inhibiting, Corrosion Protection, Metal Corrosion, Metal Corrosion Inhibitor, Metal Corrosion Mechanisms

Prices: Print: **US\$ 165.00/ EUR 165.00**  
 eBook Single-User: **US\$ 165.00/ EUR 165.00**  
 eBook Multi-User: **US\$ 289.00/ EUR 289.00**

Print: 978-0-87849-526-9  
 eBook: 978-3-0357-3960-2  
 180 pages, 1985

<https://www.scientific.net/978-0-87849-526-9/book>



**Light Metals: Science and Technology**

Volume in the series: 6

Edited by: C. Suryanarayana et al.

This volume contains the complete texts of reports presented at the International Symposium on "Light Metals: Science and Technology" (Varanasi, India, November 14-16, 1983). The collection represents to the reader's attention recent developments and achievements in technologies of extraction, processing, and applications of light metals and alloys.

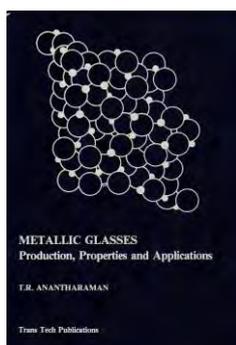
**Topics:** Manufacturing, Materials Science

**Keywords:** Aluminium Alloy, Copper-Beryllium Alloy, Electrolysis, Heat Treatment, Hydrogen Embrittlement, Light Metals, Magnesium Alloy, Mechanical Properties, Microstructure, Powder Metallurgy, Solidification, Titanium Alloy

Prices: Print: **US\$ 165.00/ EUR 165.00**  
 eBook Single-User: **US\$ 165.00/ EUR 165.00**  
 eBook Multi-User: **US\$ 289.00/ EUR 289.00**

Print: 978-0-87849-538-2  
 eBook: 978-3-0357-3965-7  
 268 pages, 1984

<https://www.scientific.net/978-0-87849-538-2/book>



**Metallic Glasses: Production, Properties and Applications**

Volume in the series: 5

Edited by: T.R. Anantharaman

Rapidly Solidified Metals constitute today a rapidly multiplying species of metallic materials with excellent combinations of properties that make them attractive alternatives and often serious competitors to conventional alloys in diverse industrial applications.

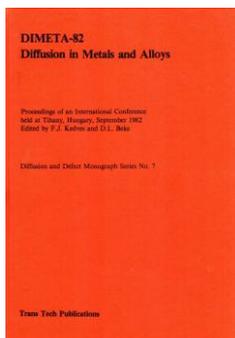
**Topics:** Materials Science

**Keywords:** Conventional Alloys, Industrial Applications, Metallic Glasses, Metallic Materials, Rapidly Solidified Metals

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 312 pages, 1984

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**Diffusion in Metals and Alloys**

Volume in the series: 4

Edited by: F.J. Kedves and D.L. Beke

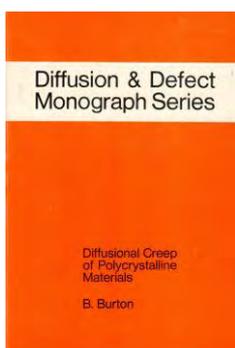
The proceedings of an International Conference "Diffusion in Metals and Alloys" (DIMETA-82, Hungary, September 1982) are related to physical metallurgy and are dedicated to researching various types of diffusion processes in metals and alloys, intermetallic compounds, amorphous metals, and heterogeneous systems. There are articles in this issue also devoted to grain boundary and surface diffusion phenomena, crystallographic defects, and novel experimental methods of diffusion phenomena study.

**Topics:** Materials Science

**Keywords:** Alloy, Crystallographic Defect, Diffusion, Dislocation, Grain Boundary Diffusion, Heterogeneous System, High-Temperature Corrosion, Intermetallic Compound, Metal, Metallic Glass, Surface Diffusion

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**Diffusion & Defect Monograph Series No 5**

Volume in the series: 3

Edited by: B. Burton

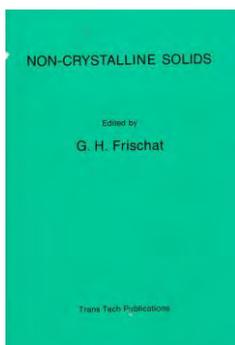
The presented monograph is devoted to the problem of diffusional creep of the polycrystalline materials. In monograph are reviewed chronologically recent developments in this sphere and included some theoretical models and results of their experimental verification for the prediction of the creep behavior of materials.

**Topics:** Materials Science, Mechanics

**Keywords:** Creep Rate, Diffusion, Diffusion Creep, Dislocation Creep, Grain Boundary Sliding, Polycrystalline Material

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**Non-Crystalline Solids**

Volume in the series: 2

Edited by: G. H. Frischat

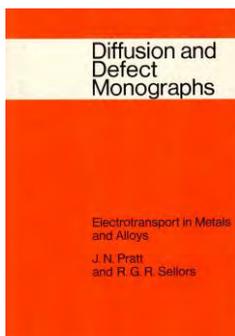
This edition is dedicated to researching non-crystalline materials starting from non-crystalline metals and alloys and finishing amorphous polymers, semiconductors, and various types of glasses. Readers will find here descriptions of methods to study non-crystalline materials, results of analysis of electrical and optical properties of amorphous semiconductors, and other detailed information about the structure and properties of non-crystalline matter.

**Topics:** Materials Science

**Keywords:** Amorphous Polymer, Amorphous Semiconductor, Diffusion, Glass, Glass Strengthening, Non-Crystalline Material, Physical Properties, Solidification, Thermal Quenching

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**Diffusion and Defect Monographs No2**

Volume in the series: 1

Edited by: J N Pratt and R G R Sellors

This monograph is devoted to the analysis and investigation of the electrodiffusion phenomenon. The application of an electric field to a metal, alloy, or other material may result in the transport of matter as well as the flow of electrons. This phenomenon, variously described as electrotransport, electromigration, or electrodiffusion, is most commonly manifested in the separation of the components of an alloy which results from their different induced rates or directions of migration. An applied field may similarly produce in pure elements a directed displacement of vacancies or interstitials (self-transport) or different isotopes (the Haefner effect).

**Topics:** Materials Science

**Keywords:** Crystalline Solids, Electrodiffusion, Electromigration, Electrotransport, Lattice Correlation, Liquid Alloy, Substitutional Alloy, Thin Film

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