
We are proud to announce that co-editor-in-chief of *International Journal of Structural Stability and Dynamics*, Dr J. N. Reddy, has been selected by the Timoshenko Medal Committee and the Applied Mechanics Division of the American Society of Mechanical Engineers (ASME) to receive the 2019 Stephen P. Timoshenko medal. Established in 1957, the Timoshenko medal is conferred upon one person every year in recognition of their distinguished contributions to the field of applied mechanics. It honours Stephen P. Timoshenko, who is known to be a world-renowned authority in applied mechanics, and commemorates his contributions to that field as an author and a teacher.

In the words of the selection committee, Dr Reddy has received the award due to his “life-time contributions to research and education in applied mechanics through the authorship of creative and highly-cited papers on variational principles, refined theories of plates and shells, computational methods, and nonlocal theories, which have impacted generations of engineers.” Despite being one of the most respected and highly cited researchers in the world in the area of shear deformation theories of composite structures, Dr Reddy finds the time to teach and mentor students and young researchers. He also serves on the editorial boards of about two dozen journals and has previously won many other international awards in the field of mechanics. Together with his research group, he is currently working on 7- and 12-parameter shell theories and non-local and non-classical mechanics theories using the ideas of Eringen, Mindlin, Koiter, and others.

World Scientific launches new book on CMOS Technology for 5G Future

Launched on 24 July 2019, *CMOS Millimeter-Wave Integrated Circuits for Next Generation Wireless Communication Systems* is World Scientific’s latest publication on 5G technology. The book addresses in-depth technical issues, limitations, considerations and challenges facing millimeter-wave (MMW) integrated circuit and system designers in designing MMW wireless communication systems from the complementary metal-oxide semiconductor (CMOS) perspective and offers both a comprehensive explanation of fundamental theories and a broad coverage of MMW integrated circuits and systems.

Scan this QR code to find out more about the book and its authors here

Watch the launch here

World Scientific
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Dr Guanrong Chen is the author, co-author or editor of seven books and countless journal articles that have been published by World Scientific over the last few decades, as well as the editor-in-chief of World Scientific’s International Journal of Bifurcation and Chaos. It is therefore with great pleasure that World Scientific celebrates his becoming the 14th top scientist worldwide in the combined fields of computer science and electronics according to Guide2Research rankings. Guide2Research is an academic portal which focuses on computer science and electronics. Its rankings are based on the H-index metric provided by Google Scholar, which attempts to measure both the productivity of a scholar and the citation impact of their publications. As of March 2019, Dr Chen has a H-index of 143, and has accumulated 92,809 citations.

Dr Chen’s main research is conducted in two main areas of engineering: the area of nonlinear systems control and dynamics, and the area of complex networks. His highly cited publications with World Scientific include From Chaos to Order: Methodologies, Perspectives and Applications, which he co-authored with Dr. Xiaoning Dong, Yet Another Chaotic Attractor, which he co-authored with Dr. Tetsushi Ueta, and A New Chaotic Attractor Coined, which he co-authored with Dr Jinhu Lü. He is currently a chair professor in the Department of Electronic Engineering and the director of the Centre for Chaos and Complex Networks at the City University of Hong Kong. He is also a fellow of the World Academy of Sciences (TWAS) and the Institute of Electrical and Electronics Engineers (IEEE), as well as a member of Academia Europaea. He has received two honorary doctorates and numerous awards for teaching and research.

We congratulate Dr Chen on being recognized as a prominent scholar in his field, and we hope he rises to ever greater prominence in the future.

The Unmanned Systems Best Paper Award recognizes outstanding papers published in the Unmanned Systems and consists of a cash prize up to US$3,000 in total each year, as well as one plaque per paper and a certificate for each author. This year’s award was sponsored by Beijing Institute of Technology, China.

Authors of papers published in Unmanned Systems during the two calendar years preceding the year of the award are eligible for the award. Nominated work will be judged by an award committee based on its originality, relevance of the application, clarity of exposition, and demonstrated impact on unmanned systems technology.

Notable Titles

Telecommunications Engineering Principles and Practice
By Amoakoh Gyasi-Agyei (Melbourne Institute of Technology, Australia)

This book covers basic principles of telecommunications and their applications in the design and analysis of modern networks and systems. It treats both traditional and modern topics, such as blockchain, OFDM, OFDMA, SC-FDMA, LPDC codes, arithmetic coding, polar codes and non-orthogonal multiple access (NOMA), and contains numerous worked examples, case studies and review questions at the end of each section.

https://www.worldscientific.com/worldscibooks/10.1142/11277
**Solar Power Finance Without the Jargon**

By Jenny Chase (BloombergNEF, Switzerland)

*Solar Power Finance Without the Jargon* is a book for the solar workers of the future. Drawing from the author’s experience of being part of a successful startup in the clean energy sector, it explains the economic side of solar power—from the difficulties of scale manufacturing, to how supply constraints have played out in the past, how project finance and the power markets work, and how scientific innovations in the performance and cost of equipment interact with perceived risk and the cost of finance to determine the economics of solar power. "This is the book that I wish I had when I first wanted to work in renewable energy" says Jenny, "It lays out the important things I had to learn over the last 13 years on the job, in an accessible and readable way."

http://www.worldscientific.com/worldscibooks/10.1142/q0219

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**Encyclopedia of Thermal Packaging Set 3: Thermal Packaging Applications**

A 3 Volume Set

Edited by Avram Bar-Cohen (University of Maryland, USA)

Successful thermal packaging is the key differentiator in electronic products, as diverse as supercomputers and cell phones, and continues to be of pivotal importance in the refinement of traditional products and in the development of products for new applications. The *Encyclopedia of Thermal Packaging*, compiled in four multi-volume sets will provide the novice and student with a complete reference for a quick ascent on the thermal packaging "learning curve," the practitioner with a validated set of techniques and tools to face every challenge, and researchers with a clear definition of the state-of-the-art and emerging needs to guide their future efforts.

The third set in the Encyclopedia includes two volumes in the planned focus on Thermal Packaging Applications and a single volume on the use of Phase Change Materials (PCM), a most important Thermal Management Technique, not previously addressed in the Encyclopedia.

https://www.worldscientific.com/worldscibooks/10.1142/10975

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**Consciousness and Robot Sentience**

2nd Edition

By Pentti O Haikonen (University of Illinois at Springfield, USA)

This book is the fully revised and updated second edition of *Consciousness and Robot Sentience*. With lots of new material, it will provide new insights into artificial intelligence (AI) and machine consciousness, beyond materials published in the first edition. The organization of this book has been streamlined for better clarity and continuity of the lines of argument.

https://www.worldscientific.com/worldscibooks/10.1142/11404
**Forthcoming References**

**Compendium on Electromagnetic Analysis**
*From Electrostatics to Photonics: Fundamentals and Applications for Physicists and Engineers (In 5 Volumes)*

- **Volume 1: Electrostatic and Magnetic Phenomena**
- **Volume 2: The New Generation of Electric Machines**
- **Volume 3: Antennas, Antenna Arrays and Microwave Devices**
- **Volume 4: Optics and Photonics I**
- **Volume 5: Optics and Photonics II**

Editor-in-chief: Igor Tsukerman (University of Akron, USA)

Edited by Michael Donahue (National Institute of Standards & Technology, USA), Yilmaz Sozer (University of Akron, USA), Thomas Bauernfeind (Graz University of Technology, Austria) and Vadim A Markel (University of Pennsylvania, USA)

The five-volume set may serve as a comprehensive reference on electromagnetic analysis and its applications at all frequencies, from static fields to optics and photonics. *Electromagnetic Analysis* is a comprehensive reference written at a level accessible to both graduate students and engineers. Each volume contains pedagogical/tutorial material of high archival value as well as chapters on state-of-the-art developments.

https://www.worldscientific.com/worldscibooks/10.1142/10987

**Encyclopedia of Packaging Materials, Processes, and Mechanics**
*Set 1: Die-attach and Wafer Bonding Technology (In 4 Volumes)*

- **Volume 1 Flip-Chip and Underfill Materials and Technology**
- **Volume 2: Wire Bonding Technology**
- **Volume 3: Flexible Chip I/O Interconnects**
- **Volume 4: Wafer Bonding Technology**

Editor-in-chief: Avram Bar-Cohen (University of Maryland, USA), Jeffrey C Suhling (Auburn University, USA) and Andrew A O Tay (Singapore University of Technology and Design, Singapore)

The *Encyclopedia of Packaging Materials, Processes, and Mechanics* provides comprehensive coverage of the configurations and techniques, assembly materials and processes, modeling and simulation tools, and experimental characterization and validation techniques for electronic packaging. Each of the volumes presents the accumulated wisdom and shared perspectives of leading researchers and practitioners in the packaging of electronic components.

https://www.worldscientific.com/worldscibooks/10.1142/11303

**Handbook on Timoshenko-Ehrenfest Beam and Uflyand-Mindlin Plate Theories**

By Isaac Elishakoff (Florida Atlantic University, USA)

In the spirit of Einstein’s dictum, “Everything should be made as simple as possible but not simpler,” this book works to clarify both the Timoshenko-Ehrenfest beam and Uflyand-Mindlin plate theories, and seeks to articulate everything in the simplest possible language, including their numerous applications.

This book is addressed to graduate students, practicing engineers, researchers in their early career, and active scientists who may want to have a different look at the above theories, as well as readers at all levels of their academic or scientific career who want to know the history of the subject. The Timoshenko-Ehrenfest Beam and Uflyand-Mindlin Plate Theories are the key reference works in the study of stocky beams and thick plates that should be given their due and remain important for generations to come, since classical Bernoulli-Euler beam and Kirchhoff-Love theories are applicable for slender beams and thin plates, respectively.

https://www.worldscientific.com/worldscibooks/10.1142/10890
The Imperial College Lectures in Petroleum Engineering

Based on a lecture series of the same name at Imperial College London, this series provides the introductory material needed for students of petroleum engineering and hydrology in five volumes.

- **Volume 1: An Introduction to Petroleum Geoscience**
  By Michael Ala (Imperial College London, UK)
  https://www.worldscientific.com/worldscibooks/10.1142/q0061

- **Volume 2: Reservoir Engineering**
  By Martin J Blunt (Imperial College London, UK)
  https://www.worldscientific.com/worldscibooks/10.1142/q0062

- **Volume 3: Topics in Reservoir Management**
  By Deryck Bond (Kuwait Oil Company, Kuwait), Samuel Krevor (Imperial College London, UK), Ann Muggeridge (Imperial College London, UK), David Waldren (Petroleum Consulting and Training (PCT) Ltd, UK) and Robert Zimmerman (Imperial College London, UK)
  https://www.worldscientific.com/worldscibooks/10.1142/q0082

- **Volume 4: Drilling and Reservoir Appraisal**
  By Olivier Allain (KAPPA, France), Michael Dyson (Striatum Ltd, UK), Xudong Jing (Shell, Netherlands), Christopher Pentland (Petroleum Development Oman, Oman), Marcel Polikar (Independent Consultant, Canada) and Vural Sander Suicmez (Maersk Oil & Gas, Denmark)
  https://www.worldscientific.com/worldscibooks/10.1142/q0115

- **Volume 5: Fluid Flow in Porous Media**
  By Robert W Zimmerman (Imperial College London, UK)
  https://www.worldscientific.com/worldscibooks/10.1142/q0146

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**Book Reviews**

**Principles of Quantum Computation and Information: A Comprehensive Textbook**

2nd Edition

By Giuliano Benenti (Università degli Studi dell’Insubria, Italy), Giulio Casati (Università degli Studi dell’Insubria, Italy) and Davide Rossini (Università di Pisa, Italy) and Giuliano Strini (Università di Milano, Italy)

"Thorough introductions to classical computation and irreversibility, and a primer of quantum theory, lead into the heart of this impressive and substantial book. All the topics — quantum algorithms, quantum error correction, adiabatic quantum computing and decoherence are just a few — are explained carefully and in detail. Particularly attractive are the connections between the conceptual structures and mathematical formalisms, and the different experimental protocols for bringing them to practice. A more wide-ranging, comprehensive, and definite text is hard to imagine."

Michael Berry, University of Bristol, UK

https://www.worldscientific.com/worldscibooks/10.1142/10909
Power Microelectronics: Device and Process Technologies
2nd Edition
By Yung C Liang (National University of Singapore, Singapore), Ganesh S Samudra (National University of Singapore, Singapore) and Chih-Fang Huang (National Tsing-Hua University, Taiwan)

“This book provides very clear descriptions of many new cutting-edge power electronic devices and, as such, would be an excellent book for readers interested in learning more about the most recent silicon and WBG materials and devices. The multitude of illustrations along with measured waveforms of critical information that is needed for practical device and application design make this book well worth reading.”

IEEE Electrical Insulation Magazine, Book Reviews

https://www.worldscibooks.com/worldscibooks/10.1142/10284

The Goldilocks Policy: The Basis for a Grand Energy Bargain
2nd Edition
By John R Fanchi (Texas Christian University, USA)

“The author leavens his discussion of a transition to a sustainable energy mix with the views of three prominent energy experts; following this is an introduction to ‘Goldilocks policy’ and a detailed discussion of its obstacles. The author stresses the importance of factoring in capacity, cost, safety, reliability, and environmental effects in developing a sustainable energy policy.”

CHOICE

https://www.worldscibooks.com/worldscibooks/10.1142/11159

The Future of Fusion Energy
By Jason Parisi (University of Oxford, UK) and Justin Ball (Swiss Federal Institute of Technology in Lausanne (EPFL), Switzerland)

“This book explains with astonishing clarity the science, technology and politics behind the greatest quest of our time — fusion energy. It is a delight to read.”

Sir Steven Cowley
Director of the Princeton Plasma Physics Laboratory and former CEO of the UK Atomic Energy Authority

“Excellent for the reader who wants to understand the fusion quest.”

Dr Bernard Bigot
Director-General of the ITER project

“The text provides an interesting history of previous and anticipated accomplishments, ending with a chapter on the relationship of fusion power to nuclear weaponry. They conclude on an optimistic note, well worth being understood by the general public.”

CHOICE

https://www.worldscibooks.com/worldscibooks/10.1142/q0160
**Book Reviews**

**Planetary Habitability in Binary Systems**  
Advances in Planetary Science – Volume 4  
By Elke Pilat-Lohinger (University of Vienna, Austria), Siegfried Eggl (Jet Propulsion Laboratory (JPL), USA) and Ákos Bazsó (University of Vienna, Austria)

"The authors are internationally established members of the scientific community and their topic of choice is timely [... I] rate this book as highly valuable. In my view, it will be of great importance to active researchers, experts and lay people alike with an interest in extrasolar planets, astrophysics, or astrobiology."

Prof. Dr. Manfred Cuntz, University of Texas at Arlington, USA  
https://www.worldscientific.com/worldscibooks/10.1142/11125

**Fundamentals of Tribology**  
3rd Edition  
By Ramsey Gohar (Imperial College London, UK) and Homer Rahnejat (Loughborough University, UK)

"The authors of this book are true specialists in this area and they give a particularly insightful view of a range of topics, populating their discussion with well-chosen citations [...] The main thrust of this book is certainly lubrication. However, it helpfully also incorporates traditional sections on the basic aspects of surface topography and dry friction/wear, making it a valuable resource for university or college students following an introductory course in tribology."

Professor Ian Sherrington, University of Central Lancashire, UK  
https://www.worldscientific.com/worldscibooks/10.1142/q0152

**Library Updates**

Columbia University and Stanford University libraries inked new agreements with World Scientific to further improve access to critical academic research.

- All new Engineering titles published in 2019 can now be read and downloaded in digital format from WorldSciNet, by users from the two institutions within their campus networks. Collectively, more than 50,000 students will benefit from the arrangement.
- Key to implementation is a seamless, and integrated platform that caters to researchers’ needs. Together with high quality content, this collaboration goes a long way in increasing the accessibility of World Scientific’s Engineering program to those who need it.