

ARCHITECTURE AND CIVIL/ EARTHQUAKE ENGINEERING TEXTBOOKS 2010

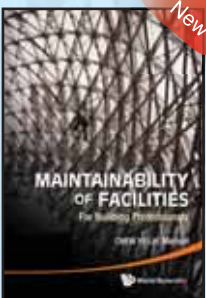
MAINTAINABILITY OF FACILITIES: For Building Professionals

by **Michael Chew Yit Lin** (National University of Singapore, Singapore)

Maintainability of Facilities: For Building Professionals focuses on spearheading the integration of maintainability, starting right from the design stage. To enable such integration, improving the knowledge of maintainability and setting maintainability benchmarks are two key issues. These objectives are fulfilled with the development of a comprehensive defect library, a material manual and a maintainability scoring system. These tools serve to define acceptable standards in design and construction practices, thus enhancing long-term maintainability of facilities. It comes with supplementary materials

Readership: Practitioners and students in architecture and building management.

550pp (approx.) Jan 2010
978-981-4291-75-0 US\$65 £49



DESIGN OF PILE FOUNDATIONS IN LIQUEFIABLE SOILS

by **Gopal Madabhushi** (University of Cambridge, UK), **Jonathan Knappett** (University of Dundee, UK) & **Stuart Haigh** (University of Cambridge, UK)

Pile foundations are the most common form of deep foundations that are used both onshore and offshore to transfer large superstructural loads into competent soil strata. This book provides many case histories of failure of pile foundations due to earthquake loading and soil liquefaction. Based on the observed case histories, the possible mechanisms of failure of the pile foundations are postulated. The book also deals with the additional loading attracted by piles in liquefiable soils due to lateral spreading of sloping ground. Recent research at Cambridge forms the backbone of this book with the design methodologies being developed directly based on quantified centrifuge test results and numerical analysis.

Readership: Researchers, academics, designers and graduate students in earthquake engineering, civil engineering and ocean/coastal engineering.

232pp Sept 2009
978-1-84816-362-1 US\$72 £54

:: Highly Recommended

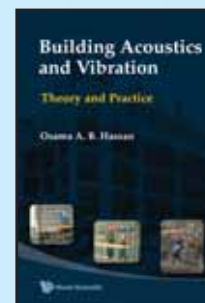
BUILDING ACOUSTICS AND VIBRATION: Theory and Practice

by **Osama A B Hassan** (Umeå University, Sweden)

Building Acoustics and Vibration is a must-have textbook for engineering students, engineers, and consultants involved in the sound, vibrations and building environment. With comprehensibility and versatility in the presentation of knowledge, this highly anticipated publication will easily fill the gap in the literature of building engineering and sciences, which presently lacks an authoritative guide on the theoretical and practical aspects of building acoustics and vibration.

Readership: Civil engineers, consultants in sound and vibration, building engineers, and graduate and post-graduate students in civil engineering.

972pp Jun 2009
978-981-283-833-9 US\$105 £79



HIGHLIGHTS

CONSTRUCTION TECHNOLOGY
FOR TALL BUILDINGS
(3rd Edition)

by **Chew Yit Lin, Michael**
(National University of Singapore,
Singapore)

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ENGINEERING
THERMODYNAMICS WITH
WORKED EXAMPLES

by **Nihal E Wijesundera** (National
University of Singapore, Singapore)

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INTRODUCTION TO
COMPUTATIONAL
EARTHQUAKE ENGINEERING

by **Muneo Hori**
(University of Tokyo, Japan)

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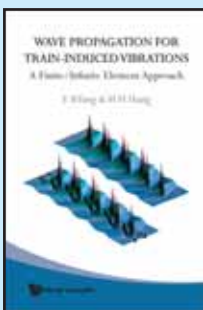
ICP Imperial College Press
www.icpress.co.uk

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WAVE PROPAGATION FOR TRAIN-INDUCED VIBRATIONS: A Finite/Infinite Element Approach

by **Y B Yang** (National Taiwan University, Taiwan) & **H H Hung** (National Center for Research on Earthquake Engineering, Taiwan)

For buildings and factories located near railway or subway lines, the vibrations caused by the moving trains, especially at high speeds, may be annoying to the residents or detrimental to the high-precision production lines. However, there is a lack of simple and efficient tools for dealing with the kind of environmental vibrations, concerning simulation of the radiation of infinite boundaries; irregularities in soils, buildings and wave barriers; and dynamic properties of the moving vehicles. This book is intended to fill such a gap. The methodology presented in the book can be adopted to analyze the vibrations caused by road traffic as well.



Readership: Senior undergraduate and graduate students, researchers and engineers in civil and structural engineering.

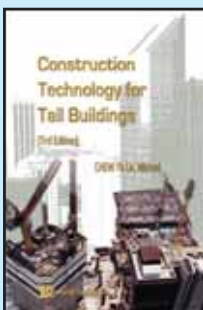
492pp Jun 2009
978-981-283-582-6 US\$112 £84

:: Bestselling

CONSTRUCTION TECHNOLOGY FOR TALL BUILDINGS (3rd Edition)

by **Chew Yit Lin, Michael** (National University of Singapore, Singapore)

This book introduces the latest construction practices and processes for tall buildings from foundation to roof. It attempts to acquaint readers with the methods, materials, equipment and systems used for the construction of tall buildings. The text progresses through the stages of site investigation, excavation and foundations, basement construction, structural systems for the superstructure, site and material handling, wall and floor construction, cladding and roof construction. This third edition also includes several new topics not covered in the previous edition.



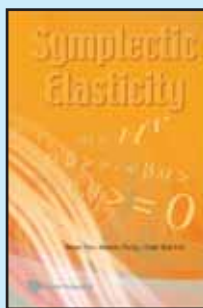
Readership: Undergraduate students and practitioners in architecture, civil engineering, building, real estate, construction, project and facilities management, and quantity and land surveying.

416pp Jan 2009
978-981-281-861-4(pbk) US\$48 £26

SYMPLECTIC ELASTICITY

by **Weian Yao, Wanxie Zhong** (Dalian University of Technology, P R China) & **Chee Wah Lim** (City University of Hong Kong, Hong Kong, SAR)

This book explains the new solution methodology by discussing plane isotropic elasticity, multiple layered plate, anisotropic elasticity, sectorial plate and thin plate bending problems in detail. A number of existing problems without analytical solutions within the framework of classical approaches are solved analytically using this symplectic approach.



Readership: Undergraduate and postgraduate students majoring in engineering mechanics or having it as an elective; researchers in solid mechanics.

316pp Feb 2009
978-981-277-870-3 US\$76 £39

:: Highly Recommended

Series on Advances in Mathematics for Applied Sciences – Vol. 80

INELASTICITY OF MATERIALS: An Engineering Approach and a Practical Guide

by **Arun R Srinivasa** (Texas A&M University, USA) & **Sivakumar M Srinivasan** (Indian Institute of Technology, Madras, India)

The book is written in three parts. Part I is primarily focused on lumped parameter models and simple structural elements such as trusses and beams. Part II is focused on small deformation multi-dimensional inelasticity and is suitable for a beginning graduate class. There is also an extensive discussion of thermodynamics in the context of small deformations. Part III focuses on more advanced situations such as finite deformation inelasticity, thermodynamical ideas and crystal plasticity. More advanced case studies are included in this part.

Readership: Mechanical, aeronautical, civil and metallurgical engineers; material scientists; biomechanists and engineers interested in inelastic/nonlinear systems.

572pp Jul 2009
978-981-283-749-3 US\$85 £64

:: Highly Recommended

ENGINEERING THERMODYNAMICS WITH WORKED EXAMPLES

by **Nihal E Wijesundera** (National University of Singapore, Singapore)

The book includes all the subject matter covered in a typical undergraduate course in engineering thermodynamics. It includes 20 to 25 worked examples for each chapter, carefully chosen to expose students to diverse applications of engineering thermodynamics. Each worked example is designed to be representative of a class of physical problems. At the end of each chapter, there are an additional 10 to 15 problems for which numerical answers are provided.

Readership: Undergraduate and graduate students in mechanical engineering, chemical engineering, civil engineering, electrical & electronic engineering, bioengineering, applied physics and thermodynamics.

450pp (approx.) Scheduled Summer 2010
978-981-4293-13-6 US\$120 £90
978-981-4293-14-3(pbk) US\$60 £45

:: Bestselling Textbook

Advanced Series in Engineering Science – Vol. 1

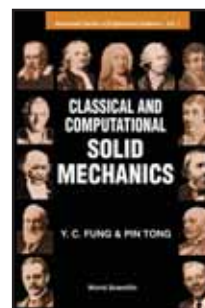
CLASSICAL AND COMPUTATIONAL SOLID MECHANICS

by **Y C Fung** (University of California, San Diego) & **Pin Tong** (Hong Kong University of Science & Technology)

“... this is a good, comprehensive, unified presentation of much of the field of solid mechanics, written by two well-regarded researchers in that field.”

Applied Mechanics Reviews

Readership: Graduate and senior undergraduate students as well as researchers in computational mechanics, civil engineering, mechanical engineering, bioengineering, aeronautics, astronautics and materials science.



952pp Jul 2001
978-981-02-3912-1 US\$98 £65
978-981-02-4124-7(pbk) US\$49 £33

:: Highly Recommended

Engineering Materials for Technological Needs – Vol. 2

FUNCTIONAL MATERIALS: Electrical, Dielectric, Electromagnetic, Optical and Magnetic Applications (With Companion Solution Manual)by **Deborah D L Chung** (*State University of New York, USA*)

Functional Materials assumes that the readers have had a one-semester introductory undergraduate course on materials science. The coverage on functional materials is much broader and deeper than that of an introductory materials science course. The book features hundreds of illustrations to help explain concepts and provide quantitative information. The style is general towards tutorial. Most chapters include sections on example problems, review questions and supplementary reading.

Readership: Undergraduate students, graduate students and professionals in most branches of engineering, specifically materials, electrical, mechanical, aerospace, chemical and civil engineering. Relevant professionals include engineers, scientists, researchers, technicians and technology managers.

360pp (approx.)	Scheduled Spring 2010	
978-981-4287-15-9	US\$85	£64
978-981-4287-16-6(pbk)	US\$45	£34

Advanced Series on Ocean Engineering

DYNAMICS OF FLOATING OFFSHORE STRUCTURESby **Subrata K Chakrabarti** (*Offshore Structure Analysis, Inc., USA*)

Dynamics of Floating Offshore Structures is designed to be used both as a textbook for graduate courses and as a reference work in offshore and ocean engineering. Its uniqueness lies in its treatment of theoretical and practical aspects of offshore structure dynamics and will stand out from the other available publications on this general subject.

Readership: Senior undergraduate, graduates and researchers in offshore and ocean engineering.

600pp (approx.)	Scheduled Fall 2009	
978-981-4280-55-6	US\$95	£71
978-981-4280-56-3(pbk)	US\$55	£41

FINITE ELEMENT MODELING OF MULTISCALE TRANSPORT PHENOMENAby **Vahid Nassehi** (*Loughborough University, UK*) & **Mahmoud Parvazinia** (*Iran Polymer and Petrochemical Institute, Iran*)

Due to the importance of the described multiscale processes in applications such as separation processes, reaction engineering and environmental systems analysis, a sound knowledge of such methods is essential for many researchers and design engineers who wish to develop reliable solutions for industrially relevant problems. The main scope of this book is to provide an authoritative description of recent developments in the field of finite element analysis, with a particular emphasis on the multiscale finite element modeling of transport phenomena and flow problem.

Readership: Graduate students, researchers and engineers in the field of mechanical engineering, chemical engineering, material engineering, civil engineering, applied mathematics and physics.

280pp (approx.)	Scheduled Fall 2010	
978-1-84816-429-1	US\$65	£49

NONLOCAL CONTINUUM DAMAGE AND PLASTICITY: Theory and Computationsby **George Z Voyiadjis** (*Louisiana State University, USA*) & **Rashid K Abu Al-Rub** (*Texas A&M University, USA*)

Modeling of the evolution of distributed damage and plasticity such as micro-cracking, void formation, dislocation densities, and shear bands necessitates strain-softening constitutive models. The nonlocal continuum concept has emerged as an effective means for regularizing the (initial) boundary value problems with strain softening, capturing the size effects observed in experiments, capturing small-scale deviations from local continuum models caused by material heterogeneity, and avoiding spurious localization that gives rise to pathological mesh sensitivity in numerical computations. This book discusses the integral and gradient formulations of nonlocality, computational aspects, and comparison of approaches and emphasizes recent developments in the bridging of material length scales.

Readership: Researchers in the academic community, national laboratories in materials and solid mechanics, companies in engineering mechanics and materials, and graduate students.

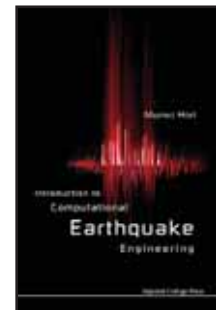
600pp (approx.)	Scheduled Winter 2010	
978-981-281-397-8	US\$128	£69

:: Bestselling Textbook**INTRODUCTION TO COMPUTATIONAL EARTHQUAKE ENGINEERING**by **Muneo Hori** (*University of Tokyo, Japan*)

This book introduces new research topics in earthquake engineering through the application of computational mechanics and computer science. The topics covered discuss the evaluation of earthquake hazards such as strong ground motion and faulting through applying advanced numerical analysis methods, useful for estimating earthquake disasters. The coverage includes stochastic modeling as well as several advanced computational earthquake engineering topics.

Readership: Graduate students and researchers in earthquake engineering; researchers in computational mechanics and computer science.

340pp	Feb 2006	
978-1-86094-620-2	US\$87	£49
978-1-86094-621-9(pbk)	US\$55	£29

**:: Bestselling Textbook****BRIDGE REHABILITATION**by **Wojciech Radomski** (*Warsaw University of Technology, Poland*)

In the last two decades, the rapid deterioration of bridge structures has become a serious technical and economical problem in many countries, including highly developed ones. Therefore, bridge rehabilitation has also become a very essential factor (sometimes even a decisive one) in contemporary bridge engineering.

The book covers in synthetic form nearly all the most important problems concerning bridge rehabilitation, such as bridge superstructure and substructure, the typical damage observed in bridges as well as the assessment and evaluation techniques of their technical condition.

Readership: Students and researchers in civil engineering.

492pp	Oct 2002	
978-1-86094-122-1	US\$64	£43

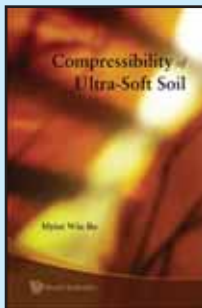


Architecture and Civil/Earthquake Engineering Textbooks 2010

COMPRESSIBILITY OF ULTRA-SOFT SOIL

by **Myint Win Bo** (*DST Consulting Engineers Inc., Canada*)

This book describes the compression behavior of ultra-soft soil upon additional load application. Various types of laboratory compression tests suitable for this type of soil are discussed, such as tests using small- and large-scale consolidometers, hydraulic Rowe cells under different drainage conditions, constant rate of loading and constant rate of strain tests.



Readership: Graduate students, academics, researchers, engineers, and contractors in civil engineering, coastal engineering and geotechnical engineering.

332pp **Apr 2008**
978-981-277-188-9 **US\$76** **£39**

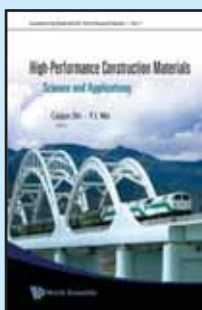
Engineering Materials for Technological Needs – Vol. 1

HIGH-PERFORMANCE CONSTRUCTION MATERIALS

Science and Applications

edited by **Caijun Shi** (*Hunan University, China*) & **Y L Mo** (*University of Houston, USA*)

This book describes a number of high-performance construction materials, including concrete, steel, fiber-reinforced cement, fiber-reinforced plastics, polymeric materials, geosynthetics, masonry materials and coatings. It discusses the scientific bases for the manufacture and use of these high-performance materials. Testing and application examples are also included, in particular the application of relatively new high-performance construction materials to design practice.



Readership: Civil engineers, material scientists and engineers, technologists, academics and graduates majoring in civil engineering.

448pp **Jun 2008**
978-981-279-735-3 **US\$98** **£56**

PRACTICAL RAILWAY ENGINEERING

by **Clifford F Bonnett** (*Institute of Civil Engineering, UK*)

This textbook is aimed at those who need to acquire a 'broad brush' appreciation of all the various engineering functions that are involved in planning, designing, constructing, operating and maintaining a railway system. An indication is given of the differences in these different disciplines between heavy rail, rapid transit and light rail operations. This book is well illustrated with numerous examples taken from worldwide experience, both recent and earlier, showing how railways have evolved through this learning process. In addition, it indicates the likely trends for the future and the areas where more research and development is necessary.



Readership: Students and rail engineers.

232pp **Nov 1996**
978-1-86094-012-5 **US\$46** **£29**

INTRODUCTION TO MICROMECHANICS AND NANOMECHANICS

by **Shaofan Li** (*University of California at Berkeley, USA*) & **Gang Wang** (*Hong Kong University of Science and Technology, China*)

"This new book furnishes a most comprehensive and self-contained introduction to the state-of-the-art knowledge of micromechanics and nanomechanics. In addition, the way that the book is organized is very logical, and the presentation is quite clear, and the examples included are excellent."

Xin-Lin Gao
Texas A&M University

Readership: Researchers and educators in academics, first year graduate students in engineering mechanics, materials science, nanotechnology, mechanical engineering, civil engineering, and applied mechanics.

516pp **Jul 2008**
978-981-281-413-5 **US\$95** **£49**
978-981-281-414-2(pbk) **US\$58** **£29**

Notable Textbook Listing

Title	Pub Date	Author	ISBN	US\$	£
DIMENSIONAL ANALYSIS AND INTELLIGENT EXPERIMENTATION (paperback)	Jun-08	PALMER ANDREW C	9789812708199(pbk)	31	20
FINITE ELEMENT METHODS FOR ENGINEERS (paperback)	Jan-96	R T Fenner	9781860940958(pbk)	17	12
BUCKLING AND POSTBUCKLING STRUCTURES: EXPERIMENTAL, ANALYTICAL AND NUMERICAL STUDIES	May-08	FALZON B G & ALIABADI FERRI	9781860947940	136	79
PRAGMATIC INTRODUCTION TO THE FINITE ELEMENT METHOD FOR THERMAL AND STRESS ANALYSIS, A: WITH THE MATLAB TOOLKIT SOFEA	Oct-06	KRYSL PETR	9789812704115(pbk)	34	22
FUNDAMENTAL AND APPLIED PRESSURE ANALYSIS	Aug-98	DALTABAN T S ET AL	9781860940910	139	94
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MATRIX-TENSOR METHODS IN CONTINUUM MECHANICS (REVISED 2ND PRINTING) (paperback)	Jul-90	S F BORG	9789810201678(pbk)	39	31
COASTAL STABILIZATION (paperback)	Jul-97	SILVESTER RICHARD & HSU JOHN R C	9789810231545(pbk)	51	38
MECHANICS OF SOLIDS AND STRUCTURES, THE	26-Apr-00	REES D W A	9781860942181(pbk)	64	47

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