



# NEW BOOKS

## July 2022

**Second Cluster Library, UKM**

**Title:** The Physics of Liquid Water

**Author:** Makoto Yasutomi

**ISBN:** 9789814877251

**Publisher:** Jenny Stanford Publishing

**Year:** 2021

**Abstract:**

Unravelling the mystery of the negative thermal expansion of liquid water has been a challenge for scientists for centuries. Various theories have been proposed so far, but none has been able to solve this mystery. Since the thermodynamic properties of matter are determined by the interaction between particles, the mystery can be solved fundamentally if the thermodynamic physical quantities using the laws of thermodynamics and statistical mechanics are determined, the experimental results are reproduced, and the phenomena in relation to the shape of the interaction between particles are elucidated. In this sense, this book has fundamentally unravelled this mystery. In addition, it discusses the mysteries of isothermal compressibility, structural diversity, as well as liquefaction and boiling points of water in relation to the shape of the interaction between particles. It carefully explains the analysis and calculation methods so that they can be easily understood by the readers.



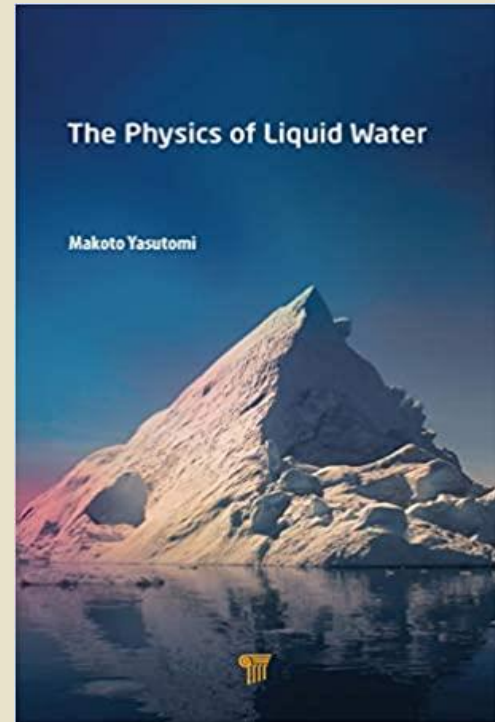
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No. Panggilan : QC311.Y347 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3Rgc4eC>



**Title:** Computational Fluid Dynamics and Heat Transfer

**Author:** Pradip Majumdar

**ISBN:** 9781498703741

**Publisher:** Taylor & Francis Inc.

**Year:** 2022

**Abstract:**

This book provides a thorough understanding of fluid dynamics and heat and mass transfer. The Second Edition contains new chapters on mesh generation and computational modelling of turbulent flow. Combining theory and practice in classic problems and computer code, the text includes numerous worked-out examples. Students will be able to develop computational analysis models for complex problems more efficiently using commercial codes such as ANSYS, STAR CCM+, and COMSOL. With detailed explanations on how to implement computational methodology into computer code, students will be able to solve complex problems on their own and develop their own customized simulation models, including problems in heat transfer, mass transfer, and fluid flows. These problems are solved and illustrated in step-by-step derivations and figures.



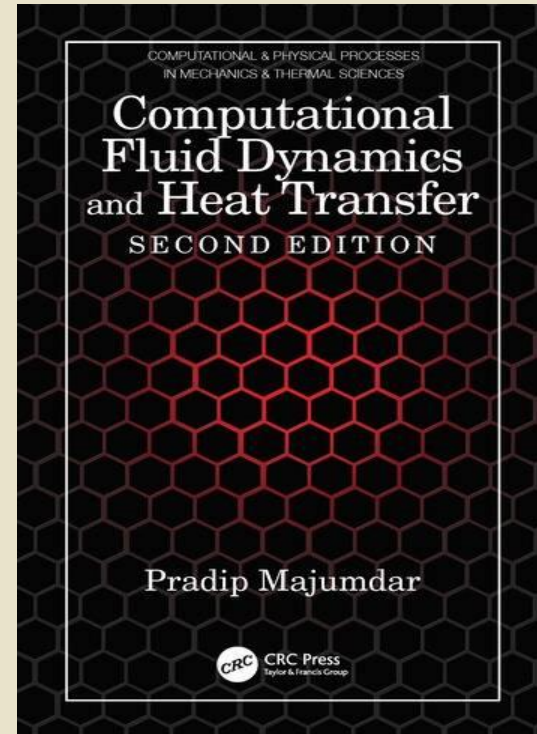
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No. Panggilan : QA911.M345 2022 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3pXp11d>



**Title:** Introduction to Structural Analysis

**Author:** Debabrata Podder, Santanu Chatterjee

**ISBN:** 9780367532727

**Publisher:** Taylor & Francis Ltd

**Year:** 2022

**Abstract:**

Introduction to Structural Analysis covers the principles of structural analysis without any requirement of prior knowledge of structures or equations. Beginning with basic principles of equilibrium of forces and moments, all other subsequent theories of structural analysis have been discussed logically. Divided into two major parts, this book discusses the basics of mechanics and principles of degrees of freedom upon which the entire paradigm rests, followed by analysis of determinate and indeterminate structures. The energy method of structural analysis is also included. Worked out examples are provided in each chapter to explain the concepts and solve real-life structural analysis problems along with a solutions manual



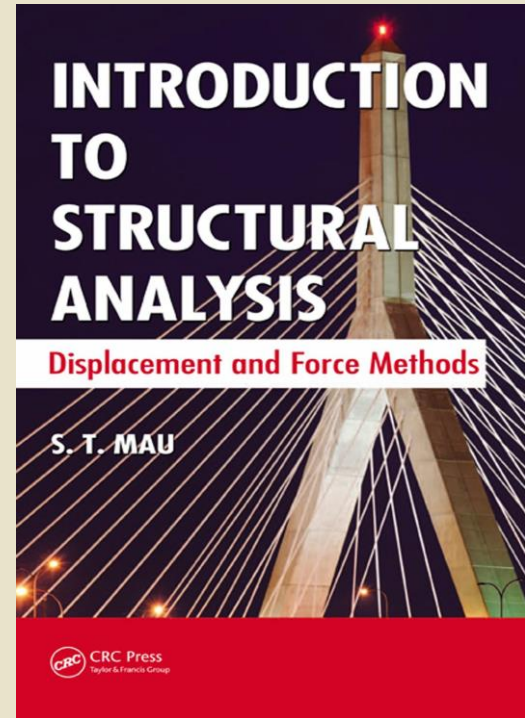
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No. Panggilan : TA645.P57 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3CMiz4U>



**Title:** Site Assessment and Remediation for Environmental Engineers  
Fundamentals of Environmental Engineering

**Author:** Cristiane Q. Surbeck, Jeff Kuo

**ISBN:** 9781138385450

**Publisher:** Taylor & Francis Ltd

**Year:** 2021

**Abstract:**

This book serves as a primary textbook for environmental site investigation and remediation of subsurface soil and groundwater. It introduces concepts and principles of field investigative techniques to adequately determine the extent of contamination in the subsurface for the selection of clean-up alternatives. It then focuses on practical calculations and skills needed to design and operate remediation systems that will both educate students and be useful for entry-level professionals in the field.



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No. Panggilan : TD1050.R57S847 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3wK0P6r>



**Title:** Soil Nailing : A Practical Guide

**Author:** Raymond Cheung, Ken Ho

**ISBN:** 9781138031876

**Publisher:** Taylor & Francis Ltd

**Year:** 2021

**Abstract:**

Soil Nailing: A Practical Guide consolidates the experience and advances made in the development and use of the soil nailing technique and encourages a wider adoption of the technique by practitioners. The book is intended for use by postgraduate students, researchers, and practicing civil and geotechnical engineers, who wish to have a more in-depth and fundamental understanding of the theory and practice behind the technique. It presents the basic principles of the technique as well as state-of-the-art knowledge and recommended standard of good practice in respect of design, construction, monitoring, and maintenance of soil nailed structures.



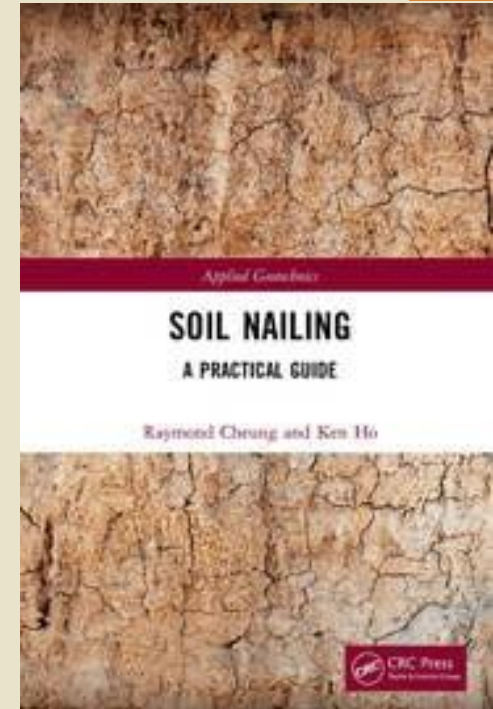
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No. Panggilan : TA749.C46 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3cyeA0Y>





**Title:** Corrosion and Protection of Reinforced Concrete

**Author:** Brian Cherry, Warren Green

**ISBN:** 9780367517601

**Publisher:** CRC PR INC

**Year:** 2021

**Abstract:**

Reinforced concrete is the most widely used construction material in the world, and extended performance is rightly expected. Many structures are in aggressive environments, of critical importance and may be irreplaceable, so repair and protection are vital. This book surveys deterioration of concrete, particularly corrosion of the steel reinforcement, and the various chemical, biological, physical and mechanical causes of deterioration. It outlines condition survey and diagnosis techniques by on-site and laboratory measurements. It sets out mechanical methods of protection and repair, such as patching, inhibitors, coatings, penetrants and structural strengthening as well as cathodic protection and other electrochemical methods. This book also gives guidance on preventative measures including concrete technology and construction considerations, coatings and penetrants, alternate reinforcement, permanent corrosion monitoring and durability planning aspects.



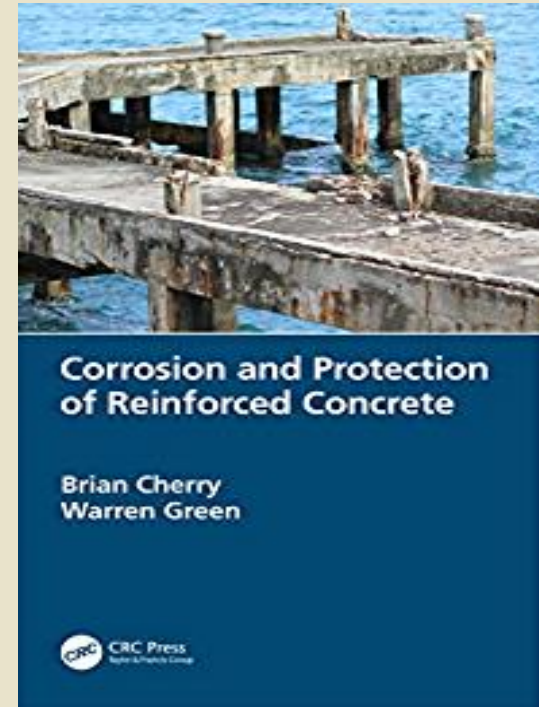
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No. Panggilan : TA445.C44 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3CKAlzQ>



**Title:** Model Uncertainties in Foundation Design

**Author:** Chong Tang, Kok-Kwang Phoon

**ISBN:** 9780367111366

**Publisher:** Taylor & Francis Ltd

**Year:** 2021

**Abstract:**

Model Uncertainties in Foundation Design is unique in the compilation of the largest and the most diverse load test databases to date, covering many foundation types (shallow foundations, spud cans, driven piles, drilled shafts, rock sockets and helical piles) and a wide range of ground conditions (soil to soft rock). All databases with names prefixed by NUS are available upon request. This presents the most comprehensive evaluation of the model factor mean (bias) and coefficient of variation (COV) for ultimate and serviceability limit state based on these databases. They can be used directly for AASHTO LRFD calibration.



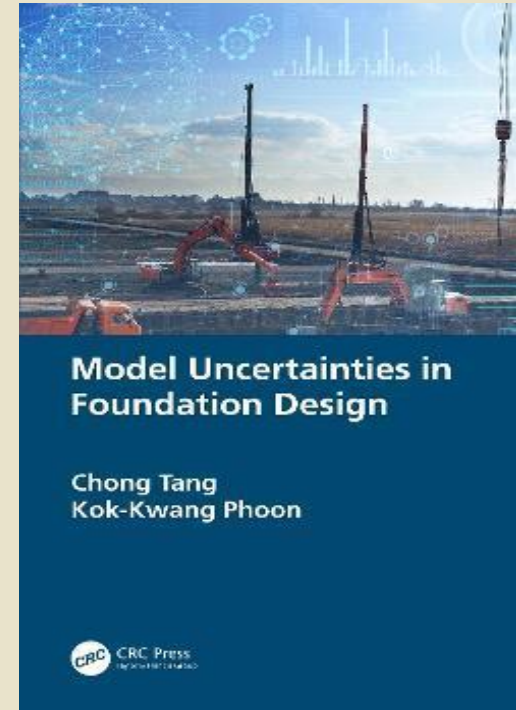
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No. Panggilan : TA755.T346 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3q0jerG>





**Title:** Biological Treatment of Solid Waste : Enhancing Sustainability

**Author:** Elena C. Rada

**ISBN:** 9781774635872

**Publisher:** ALPEL PUB (PQ)

**Year:** 2016

**Abstract:**

Intended for a wide audience ranging from engineers and academics to decision-makers in both the public and private sectors, Biological Treatment of Solid Waste: Enhancing Sustainability reviews several technologies that help communities manage solid waste sustainably, while at the same time generating energy, revenue, and other resources. Included within these larger topics are case studies and investigations into particular aspects of each, with attention paid to food waste, animal waste, municipal waste, and certain forms of industrial waste. The editor is an environmental engineer with an international reputation, and she has included her own research studies as well as that of her colleagues, many of which have been presented at international waste management conferences. She concludes that our world can no longer afford to consider waste as something that can be discarded with no regard for future use. Instead, if addressed correctly through policy and practice, solid waste can become a valuable resource.



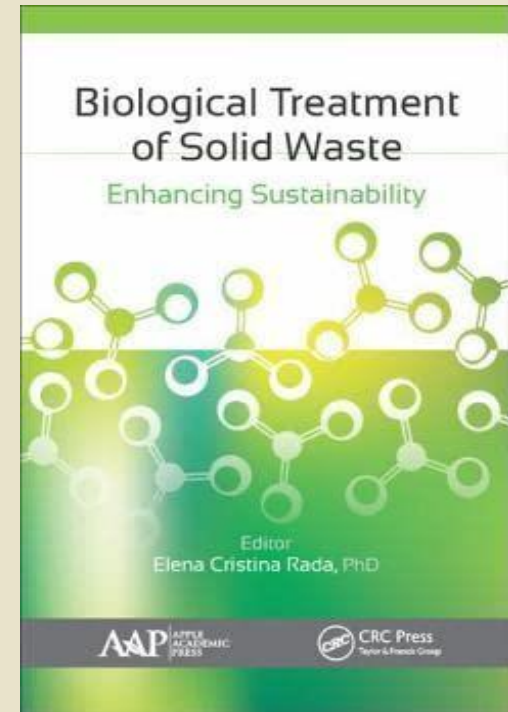
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No. Panggilan : TD755.B465 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3cyycIE>



**Title:** Geosynthetic Encased Columns for Soft Soil Improvement

**Author:** Márcio Almeida, Mario Riccio, Iman Hosseinpour

**Publisher:** CRC PR INC

**Year:** 2019

**Abstract:**

The geosynthetic encased column (GEC) is a relatively recent method developed for soft soil improvement. The method was firstly introduced as a concept in the 1980s and first practical applications started in the 1990s. GECs have been widely used in some parts of the world for the last three decades. However, there is no book in the literature summarizing the knowledge accumulated during this period in relation to this soft ground improvement technique. The purpose of this book is to provide readers with the GEC fundamentals and practical applications. Chapter 1 presents the general principles of this ground improvement technique including the methods used for GEC installation and how the material properties may be selected. Chapter 2 presents the design methods, thus settlement calculations by means of analytical methods and stability calculations by limit equilibrium methods are explained in detail. Chapter 3 presents calculation examples illustrating the usual steps to be done for both service limit state and ultimate limit state designs. Then field performances exemplifying practical applications of the GEC technique are presented in Chapter 4 for some case histories. Following numerical analyses, often used in design to complement analytical methods, are presented in Chapter 5. Annexes I and II at the end contain the charts developed to perform settlement calculations.



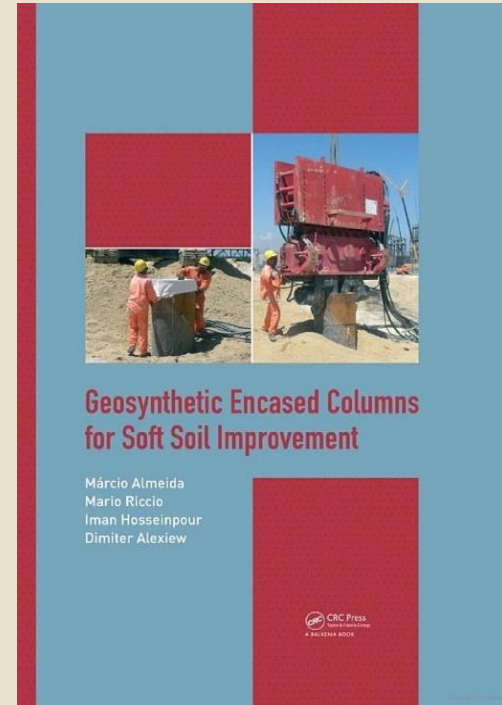
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No. Panggilan : TA788.A446 3

Lokasi : Rak Pameran, Aras 2

For more info:

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**Title:** Managing Major Hazards The lessons of the Moura Mine disaster

**Author:** Andrew Hopkins

**ISBN:** 9780367718695

**Publisher:** Taylor & Francis Ltd

**Year:** 2021

**Abstract:**

Many organisations live with hazards that have the potential to cause disaster. This was the case at Moura underground coal mine in Central Queensland, where 11 men died in an explosion in 1994. Andrew Hopkins shows that the explosion was the result of organisational failure, and uses it to draw lessons about managing major hazards. He argues that there are always tell-tale signs of impending disaster, and that organisations need to find ways of gathering this information and reacting to it appropriately. The Moura story also demonstrates the need to move responsibility for risk management up the corporate hierarchy to ensure that it is not overshadowed by production pressures. Otherwise disasters will repeat themselves in horrifyingly similar ways. *Managing Major Hazards* is a gripping story and essential reading for occupational health and safety professionals, executives working in hazardous industries, policy makers, and readers interested in risk management and disaster studies.



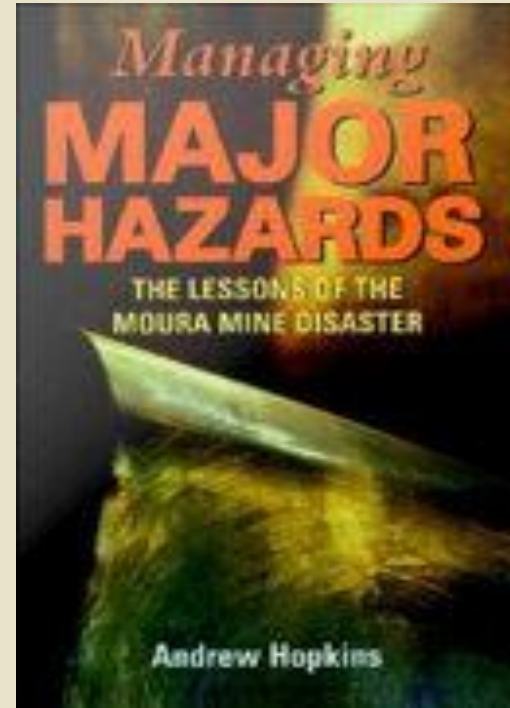
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No. Panggilan : TN295.H646 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3cBy2Kc>



**Title:** Shallow Foundations and Soil Constitutive Laws

**Author:** Swami Saran

**ISBN:** 9780367781613

**Publisher:** Taylor & Francis Ltd

**Year:** 2021

**Abstract:**

The book offers a systematic analysis of footings (i.e. shallow foundations) in a realistic way, using constitutive relationships of the soil. The aim of the book is to deal with the theme holistically, involving the determination of the constitutive law of the soil, and then proportioning the footing occurring in different situations in actual practice. The book has eleven chapters. After giving an introduction and scope of the book in the first chapter, second and third chapters are respectively devoted to constitutive laws of soil and basic stress equations. In the third chapter analysis of strip footings subjected to central vertical load has been dealt. This analysis has been extended for eccentric -inclined load in the fifth chapter. Since problems of shallow foundations resting adjacent to a slope are of prime importance, this aspect has been dealt in sixth chapter. In the seventh chapter, analysis pertaining to square and rectangular footings have been presented. Effect of interference between adjacent footings is covered in chapter eight. Since ring footings are usually provided for tanks, silos, towers etc., ninth chapter is devoted to this. Added attraction of the book is its chapter ten in which footings located in seismic regions have been covered. Effect of embedment below the ground surface on the behaviour of footings located both in non-seismic and seismic regions has been dealt in the chapter eleven.



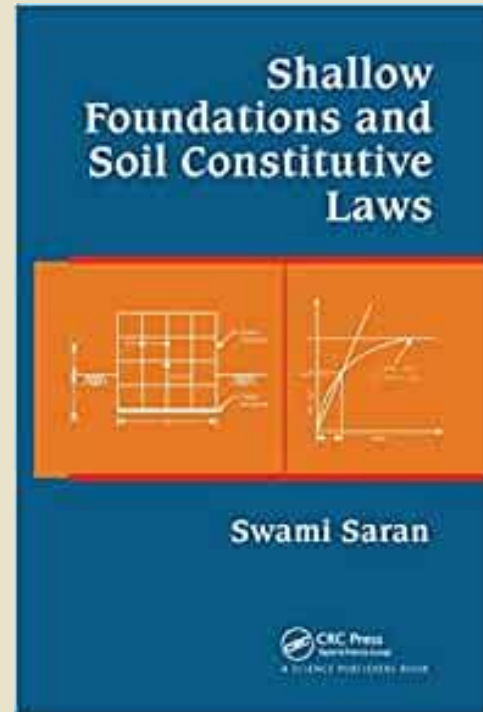
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**No. Panggilan : TA775.S2765 3**

**Lokasi : Rak Pameran, Aras 2**

**For more info:**

<https://bit.ly/3cETkqj>



**Title:** Smart Connection Systems Design and Seismic Analysis

**Author:** Jong Wan Hu

**ISBN:** 9780367783372

**Publisher:** Taylor & Francis Ltd

**Year:** 2021

**Abstract:**

This book introduces new smart connection systems which can be used in aseismic building design in order to control inter-story drifts and to reduce residual displacements. They are also utilized as damper devices and base isolators. The application of these systems to composite moment frame buildings will also be treated in the book. In addition, the book will discuss how to make nonlinear frame models used for simulating entire behavior in the building as well as advance finite element (FE) models used for accurately reproducing mechanical behavior in the local system. Will be of interest to researchers, engineers, and students in the field of civil and structural engineering.



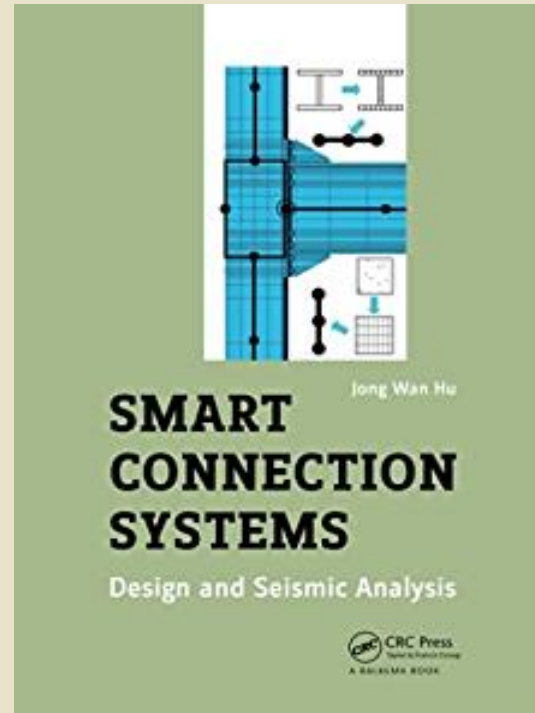
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No. Panggilan : TA658.44.H78 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3Tx9lzb>



**Title:** Solid Waste as a Renewable Resource Methodologies

**Author:** Jimmy Alexander Faria Albanese, M. Pilar Ruiz

**ISBN:** 9781774635728

**Publisher:** ALPEL PUB (PQ)

**Year:** 2021

**Abstract:**

This title includes a number of Open Access chapters.

The twenty-first century world faces several enormous challenges: how to mitigate climate change, meet a growing energy demand without relying on fossil fuels, and manage the escalating quantities of solid waste generated by cities around the world. This compendium volume offers a viable solution to all three: using solid waste as a renewable resource. Intended for a wide audience ranging from engineers and academics to decision-makers in both the public and private sectors, this volume has gathered together research into a range of technologies and methodologies. The editors, two well-published researchers at the top of their field, have selected articles that lay the foundation for this discussion. They have then included chapters for the following waste management scenarios: anaerobic digestion, composting, pyrolysis and chemical upgrading, incineration and carbonization, and gasification.



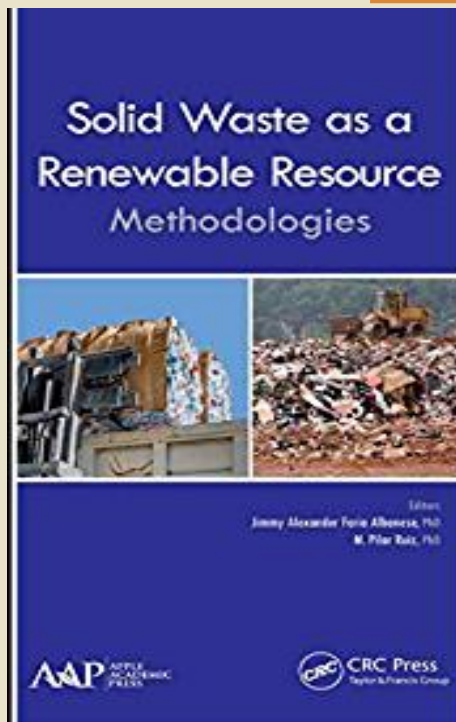
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No. Panggilan : TD794.5.S665 3

Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3B4mhWm>





**Title:** Notes on Geoplasticity  
**Author:** William G. Pariseau  
**ISBN:** 9781032085562  
**Publisher:** Taylor & Francis Ltd  
**Year:** 2020

**Abstract:**

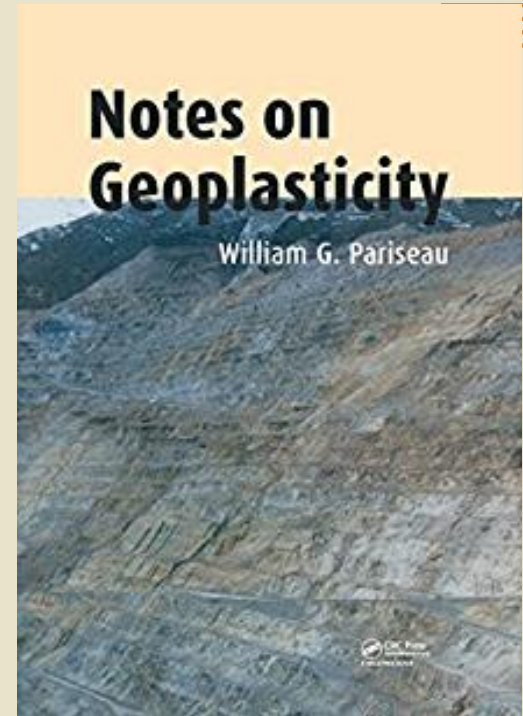
This book is about geoplasticity, solid mechanics of rock, jointed rock and soil beyond the domain of a purely elastic deformation. Plastic deformation is irreversible and begins at the limit to elasticity with any attempt at further loading. Stress at the limit to elasticity is "strength" which is described by a functional relationship amongst stresses, that is, by a yield function or failure criterion. Mohr-Coulomb, Drucker-Prager and Hoek-Brown criteria are well-known examples in geotechnics.



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No. Panggilan : TA710..5.P347 3  
Lokasi : Rak Pameran, Aras 2

For more info:  
<https://bit.ly/3RsWgFx>



**Title:** Durability of Reinforced Concrete Structures

**Author:** Paul Chess, Warren Green

**ISBN:** 9781032176086

**Publisher:** CRC PR INC

**Year:** 2021

**Abstract:**

Reinforced concrete structures corrode as they age, with significant financial implications, but it is not immediately clear why some are more durable than others. This book looks at the mechanisms for corrosion and how corrosion engineering can be used for these problems to be minimized in future projects. Several different examples of reinforced concrete structures with corrosion problems are described and the various life enhancement solutions considered and applied are discussed. The book includes a chapter on the effectiveness of corrosion monitoring techniques and questions why the reality is at odds with current theory and standards. Specialist contractors, consultants and owners of corrosion damaged structures will find this an extremely useful resource. It will also be a valuable reference for students at postgraduate level.



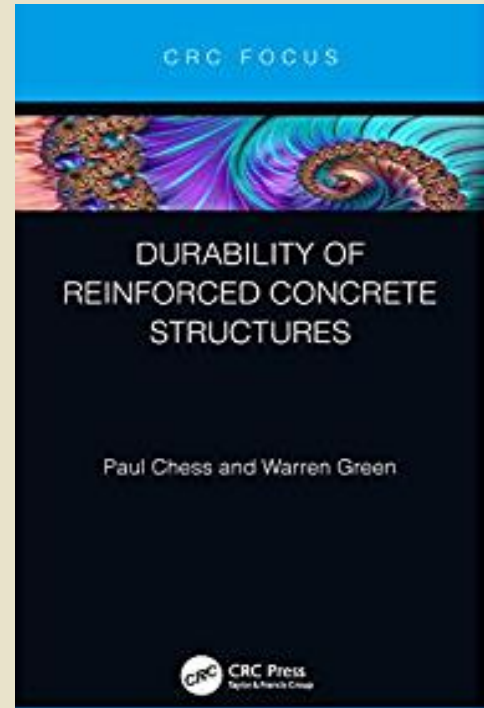
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Lokasi : Rak Pameran, Aras 2

For more info:

<https://bit.ly/3KEhpug>



**Title:** Back Analysis in Rock Engineering

**Author:** Shunsuke Sakurai

**ISBN:** 9781032096506

**Publisher:** CRC PR INC

**Year:** 2021

**Abstract:**

This book provides practicing engineers working in the field of design, construction and monitoring of rock structures such as tunnels and slopes with technical information on how to design, how to excavate and how to monitor the structures during their construction. Based on the long-term engineering experiences of the author, field measurements together with back analyses are presented as the most powerful tools in rock engineering practice. One of the purposes of field measurements is to assess the stability of the rock structures during their construction. However, field measurement results are only numbers unless they are quantitatively interpreted, a process in which back analyses play an important role.



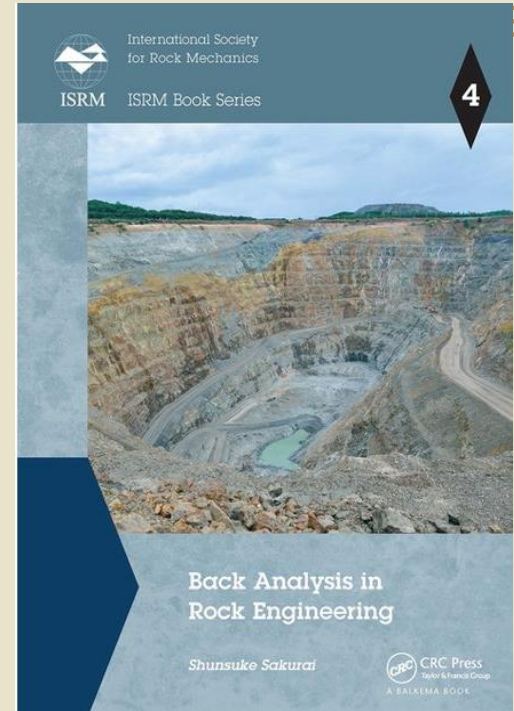
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**No. Panggilan : TA706.S235 3**

**Lokasi : Rak Pameran, Aras 2**

**For more info:**

<https://bit.ly/3R8TPrG>





***Thank You***