



# CATALOG

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**2012  
2013**



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- Books published by Presses internationales Polytechnique are distributed in more than 25 countries. In North America, Presses internationales Polytechnique handles its own promotion and distribution. In Europe and French-speaking Africa, its books are distributed by Technique et Documentation - Lavoisier of France.
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  - Les Éditions Technip, Paris, France;
  - Hermann - Éditeurs des sciences et des arts, Paris, France;
  - Les Presses de l'École des Mines de Paris, France.

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## TO ORDER

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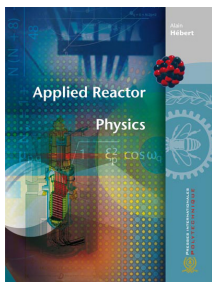
## CHEMISTRY, PHYSICS, MATERIALS

### APPLIED REACTOR PHYSICS

**Author(s)** > Alain Hébert

**ISBN** > 978-2-553-01436-9

7/2009 > 424 pages > **PDF**



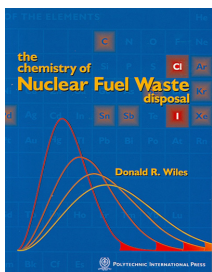
In *Applied Reactor Physics*, reactor physics is approached from the fundamental level. Legacy numerical techniques are introduced with sufficient details to permit their implementation in Matlab. More advanced and/or proprietary techniques may be available in a production environment, but these can be obtained as evolutions of the fundamental approaches presented in the book. A characteristic of *Applied Reactor Physics* is to emphasize the algorithmic nature of numerical solution techniques used in reactor physics. Many numerical solution approaches described in the book are accompanied by Matlab scripts and readers are encouraged to write short Matlab scripts of their own in order to solve the End-of-Chapter exercises.

### CHEMISTRY OF NUCLEAR FUEL WASTE DISPOSAL (THE)

**Author(s)** > Donald R. Wiles

**ISBN** > 978-2-553-01025-5

7/2002 > 182 pages



In this book, Dr. Wiles expertly describes the nature of radioactivity and nuclear power. The author discusses, in detail, the management of radioactive waste using the multi-barrier system as well as taking a rather unusual approach to risk assessment. This book is a must for anyone interested in nuclear waste disposal including the processes involved, the areas of uncertainty and the bases for statements about risk to human and other life.

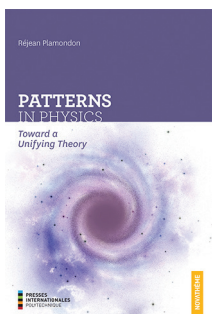
### PATTERNS IN PHYSICS

**Toward a Unifying Theory**

**Author(s)** > Réjean Plamondon

**ISBN** > 978-2-553-01633-2

6/2012 > 172 pages



Why are there four basic forces of Nature and where do they come from? Why does any massive body in the Universe experience an intrinsic rotation? What is the link between the speed of light and the gravitational, Boltzmann and Planck constants? What are the relationships between electron mass, the Avogadro number, vacuum permittivity, and the masses of the Sun and the Earth? Are dark matter and dark energy necessary to explain the observable Universe? Can the lepton family be reduced to two members? These are just a few of the many questions that this scientific work addresses and to which it provides potential answers.

This book aims to lay out the groundwork from which a theory for bridging the gap between quantum mechanics and general relativity could be built.

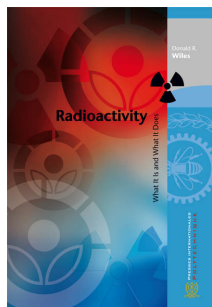
**RADIOACTIVITY**

**What It Is and What It Does**

**Author(s)** > Donald R. Wiles

**ISBN** > 978-2-553-01430-7  
6/2009 > 172 pages > **PDF**

A number of good textbooks on radiochemistry have been published for experts and advanced students, but very few are written for the general public and the nonspecialist. This book takes no stand on the political controversy surrounding nuclear power; the facts are presented with no sermon attached, and anecdotes from the author's vast experience in the field provide a more personal insight into this complex subject. He gives detailed descriptions of several serious nuclear accidents, including that at Chernobyl. In the final chapter, the author asks the question, «Are we completely safe?» The answer, intriguingly, is «I hope not.» Read on to see why.



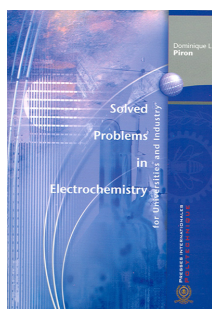
**SOLVED PROBLEMS IN ELECTROCHEMISTRY**

**For Universities and Industry**

**Author(s)** > Dominique L. Piron

**ISBN** > 978-2-553-01136-8  
1/2004 > 220 pages

The objective of this book is to develop the reader's ability to solve problems in electrochemistry. *Solved Problems in Electrochemistry* offers an interesting bridge between science and useful applications. Each chapter consists of three sections: (1) a clear and simple presentation of useful concepts, (2) the presentation and solution of some twenty problems, and (3) a set of unsolved problems proposed as exercises. The first five chapters use basic concepts in practical situations, and the last three chapters present more complex problems in electrolysis, corrosion rates and prevention, and electrochemical cells and batteries.



**ELECTRICITY, ELECTRONICS, ELECTROTECHNICS**

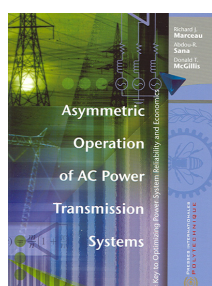
**ASYMMETRIC OPERATION OF AC POWER TRANSMISSION SYSTEMS**

**The Key to Optimizing Power System Reliability and Economics**

**Author(s)** > Richard J. Marceau, Abdou-R. Sana, Donald T. McGillis

**ISBN** > 978-2-553-01403-1  
1/2006 > 200 pages > **PDF**

As will be seen in this book, asymmetric operation of three-phase transmission corridors brings new degrees of freedom to the planning and operation of point-to-point transmission, inter-area interconnections, single and multiple-line corridors, and networks feeding large metropolitan areas, either for new build or retrofit. *Asymmetric Operation of AC Power Transmission Systems* is a comprehensive review of all aspects of asymmetric operation ranging from system implementation to costs, reliability and economics.



## ENVIRONMENT, SUSTAINABLE DEVELOPMENT, SOCIAL RESPONSIBILITY

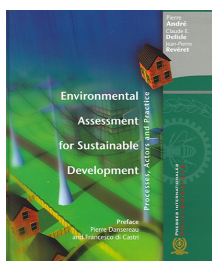
### ENVIRONMENTAL ASSESSMENT FOR SUSTAINABLE DEVELOPMENT

#### Processes, Actors and Practice

**Author(s)** > Pierre André, Claude E. Delisle, Jean-Pierre Revéret

**ISBN** > 978-2-553-01138-2

4/2004 > 522 pages



This book aims to reach three objectives. First, it introduces environmental assessment (EA) to people from different disciplines, and therefore it opens up the perspective of new disciplinary horizons. Second, the authors discuss EA as a socio-political process rather than emphasizing methodologies. Third, this book draws mainly on the experience in Francophone countries which is still poorly disseminated. This book targets professors and students interested in environmental assessment, and particularly in environmental impact assessment, as well as all actors involved in the environmental scene.

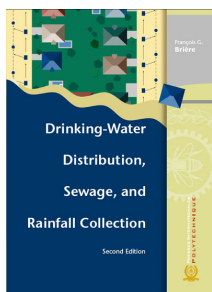
## CIVIL ENGINEERING, PREVENTION AND EMERGENCY MEASURES

### DRINKING-WATER DISTRIBUTION, SEWAGE, AND RAINFALL COLLECTION, 2nd EDITION

**Author(s)** > François G. Brière

**ISBN** > 978-2-553-01415-4

11/2007 > 414 pages > **PDF**



Through the many examples provided, engineers and technicians alike will learn how to perform calculations for storm water networks, sanitary sewage networks and water distribution networks after computing flowrates and flowrate variations in time and space. The work clearly presents all materials required to design a distribution and collection network from initial selection to final installation and describes accessories. The author also outlines calculation methods for the flowrates and water volumes necessary for fire-fighting equipment and explains how to calculate loads on buried pipelines so that the appropriate materials can be chosen.

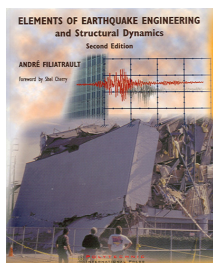
**ELEMENTS OF EARTHQUAKE ENGINEERING,  
2nd EDITION**

**Author(s)** > André Filiatrault

**ISBN** > 978-2-553-01021-7  
1/2002 > 410 pages

This book not only focuses on structural analysis and design, it also discusses other disciplines, such as geology, seismology, and soil dynamics, so that structural engineers can better interact with different specialists when working on earthquake engineering projects.

This book is written for practising structural engineers, undergraduate and graduate students of structural engineering, and university professors in this field of expertise. The reader must have a background knowledge in strength of materials and static analysis of structures. However, no prior knowledge of earthquake engineering or structural dynamics is necessary.



**TO BE PUBLISHED**

**ELEMENTS OF EARTHQUAKE ENGINEERING, 3RD EDITION**

**REDUCING VULNERABILITY  
OF CRITICAL INFRASTRUCTURES**

**Methodological Manual**

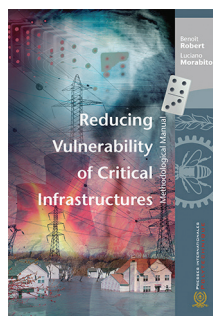
**Author(s)** > Luciano Morabito, Benoît Robert

**ISBN** > 978-2-553-01597-7  
8/2011 > 68 pages > **PDF**



This book results from years of exceptional collaboration between multiple public and private partners. It offers a concrete methodology for identifying and assessing interdependencies between critical infrastructures. Using an original approach based on the consequences of failures rather than their causes, the methodology enables the creation of tools that integrate spatial and temporal parameters for anticipating and managing domino effects resulting from the failure of a given infrastructure in order to reduce the vulnerability of all infrastructures.

This book is primarily aimed at municipal risk managers, government services and essential services suppliers but also offers academics and students in management and engineering a new theoretical approach to risk.

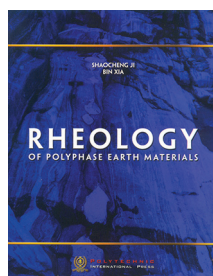


**RHEOLOGY OF POLYPHASE EARTH MATERIALS**

**Author(s)** > Shaocheng Ji and Bin Xia

**ISBN** > 978-2-553-01033-0  
11/2002 > 260 pages

This is the most comprehensive compilation on elastic and plastic deformation and the rheological properties of polypphase rocks that form the Earth's crust and mantle. An improved understanding of deformation and flow of Earth materials is of primary importance in studies of geodynamic processes. This book presents a comprehensive review of the subject and encourages students and scientists to engage in challenging research to solve the many remaining problems.



## BUSINESS AND MANAGEMENT FOR ENGINEERS

### INTERNATIONAL DEVELOPMENT PROJECT APPRAISAL, EXECUTION PLANNING AND MONITORING

**Author(s)** > Joseph Martial Ribeiro



**ISBN** > 978-2-553-01556-4

6/2011 > 148 pages > **PDF**



The author has adopted a pragmatic approach in preparing this book, taking advantage of his wide range of practical experience and his many enriching interactions with development project stakeholders from various backgrounds. Figures, tables and examples are used throughout the text to explain the key concepts and illustrate the relationships among the many activities involved in preparing and appraising a development project. Development pillars, the project cycle and project formulation studies are discussed in the introduction, followed by a detailed examination of project appraisal activities. The book goes on to discuss project implementation planning and monitoring before addressing the issue of the funding of recurrent costs generated by development projects in developing countries and concluding with some observations on the best way to move forward.

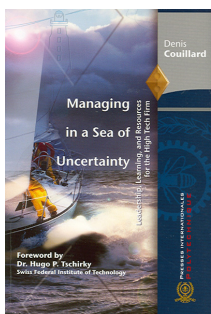
### MANAGING IN A SEA OF UNCERTAINTY

#### Leadership, Learning, and Resources for the High Tech Firm

**Author(s)** > Denis Couillard

**ISBN** > 978-2-553-01150-4

1/2006 > 272 pages



This book proposes two simple models for understanding the inter-relationships among the technology management concepts that underlie the management of a high tech organization. The "Corporate Ship" analogy illustrates the dynamic nature of strategy making, and the need to reconcile the pursuit of short-term opportunity with long-term objectives in turbulent high technology environments. The "Corporate Diamond" model uncovers the strong inter-relationships that exist between key concepts in technology management: leadership, learning, managing resources and developing successful new products and services.



**PROCUREMENT OF GOODS, WORKS AND SERVICES  
IN DEVELOPMENT PROJECTS**

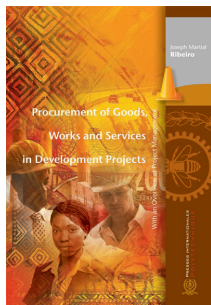
**With an Overview of Project Management**

**Author(s)** > Joseph Martial Ribeiro

**ISBN** > 978-2-553-01431-4

7/2009 > 118 pages > **PDF**

The author’s practical experience in capacity building in the areas of project management and procurement throughout the African continent has led him to take a simple and direct approach in preparing this book. The reader is taken step by step from the concept of a development project and its preparation cycle to its actual management, and is given many details related to the initiation, control and closure processes. The reader is then introduced to public concepts and the various cycles specific to goods, civil works or services. Procurement planning and monitoring, the various types of contracts and the intricacies of contract administration are also discussed.



**MATHEMATICS**

**QUICK ON THE DRAW**

**Crime Busting with  
a mathematical twist**

English version of *L'Agapheur*

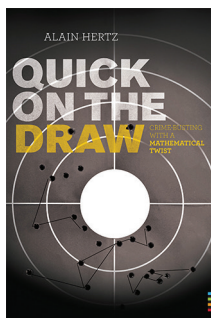
**Author(s)** > Alain Hertz

**ISBN** > 978-2-553-01626-4

6/2012 > 208 pages > **PDF** > **ePUB**



A theft and a hold-up, an impostor trying to collect an inheritance, the disappearance of a lab mouse worth several hundred thousand dollars, and a number of other cases: these are the investigations led by Maurice Manori, a police inspector known for being quick on the draw. He owes his reputation to his highly effective—but very unconventional—methods. His secret weapon? Graph theory. In search of the truth, Inspector Manori draws graphs that will introduce you to the ins and outs of a mathematical discipline with countless handy applications.



## MECHANICS

### TO BE PUBLISHED

#### AIRCRAFT AND WIND TURBINE ICING

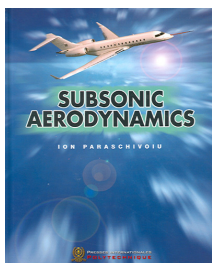
**Author(s)** > Ion Paraschivoiu, Saeed Farooq

#### SUBSONIC AERODYNAMICS

**Author(s)** > Ion Paraschivoiu

**ISBN** > 978-2-553-01130-6

11/2003 > 534 pages



This book presents the theory from its most basic principles to the notion of experimental aerodynamics while emphasizing the in-depth study of aerodynamic profiles in subsonic regime and the finite-wing span in two and three dimensions. In addition, to the benefit of all concerned, this work is a complement to the theoretical part as it offers a multitude of practical applications related to the physical phenomena characteristic to aerodynamics. This book is both theoretical and practical and contains a wealth of practical examples.

### ALSO AVAILABLE

#### SUBSONIC AERODYNAMICS - COLLECTION OF EXERCISES

**ISBN** > 978-2-553-01131-3

11/2003 > 230 pages

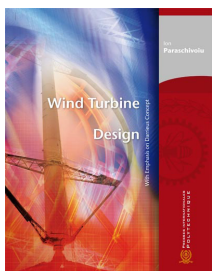
#### WIND TURBINE DESIGN

**With Emphasis on Darrieus Concept**

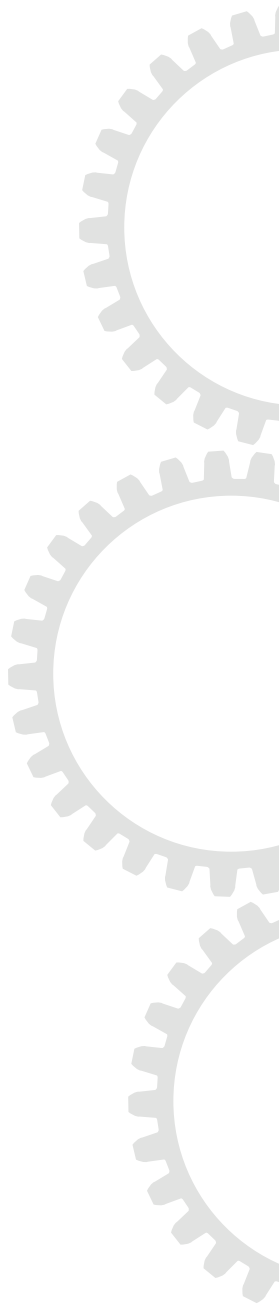
**Author(s)** > Ion Paraschivoiu

**ISBN** > 978-2-553-00931-0

6/2002 > 442 pages > **PDF**



Wind energy is the fastest growing alternate source of energy in the world since its purely economic potential is complemented by its great positive environmental impact. The wind turbine, whether it may be a Horizontal-Axis Wind Turbine (HAWT) or a Vertical-Axis Wind Turbine (VAWT), offers a practical way to convert the wind energy into electrical or mechanical energy. Although this book focuses on the aerodynamic design and performance of VAWTs based on the Darrieus concept, it also discusses the comparison between HAWTs and VAWTs, future trends in design and the inherent socio-economic and environmental friendly aspects of wind energy as an alternate source of energy.



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