

1. Record Nr.	UNINA9910299729003321
Autore	Jakobsen Hugo A
Titolo	Chemical Reactor Modeling : Multiphase Reactive Flows // by Hugo A. Jakobsen
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
ISBN	3-319-05092-3
Edizione	[2nd ed. 2014.]
Descrizione fisica	1 online resource (1589 p.)
Disciplina	003.3 620 620.1064 621.4021
Soggetti	Fluid mechanics Chemical engineering Industrial engineering Production engineering Thermodynamics Heat engineering Heat - Transmission Mass transfer Mathematical models Engineering Fluid Dynamics Industrial Chemistry/Chemical Engineering Industrial and Production Engineering Engineering Thermodynamics, Heat and Mass Transfer Mathematical Modeling and Industrial Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	From the Contents: Single Phase Flow -- Elementary Kinetic Theory of Gases -- Multiphase Flow -- Flows of Granular Materials -- Interfacial Transport Phenomena Closures -- Chemical Reaction Engineering -- Agitation and Fluid Mixing Technology -- Bubble Column Reactors -- The Population Balance Equation.

Chemical Reactor Modeling closes the gap between Chemical Reaction Engineering and Fluid Mechanics. The second edition consists of two volumes: Volume 1: Fundamentals. Volume 2: Chemical Engineering Applications. In volume 1 most of the fundamental theory is presented. A few numerical model simulation application examples are given to elucidate the link between theory and applications. In volume 2 the chemical reactor equipment to be modeled are described. Several engineering models are introduced and discussed. A survey of the frequently used numerical methods, algorithms and schemes is provided. A few practical engineering applications of the modeling tools are presented and discussed. The working principles of several experimental techniques employed in order to get data for model validation are outlined. The monograph is based on lectures regularly taught in the fourth and fifth years graduate courses in transport phenomena and chemical reactor modeling, and in a post graduate course in modern reactor modeling at the Norwegian University of Science and Technology, Department of Chemical Engineering, Trondheim, Norway. The objective of the book is to present the fundamentals of the single-fluid and multi-fluid models for the analysis of single- and multiphase reactive flows in chemical reactors with a chemical reactor engineering rather than mathematical bias. Organized into 13 chapters, it combines theoretical aspects and practical applications and covers some of the recent research in several areas of chemical reactor engineering. This book contains a survey of the modern literature in the field of chemical reactor modeling.

2. Record Nr.	UNINA9910255043403321
Autore	Henrard Marc
Titolo	Algorithmic Differentiation in Finance Explained // by Marc Henrard
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Palgrave Macmillan, , 2017
ISBN	9783319539799 3319539795
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XIII, 103 p. 7 illus.)
Collana	Financial Engineering Explained
Disciplina	332
Soggetti	Financial engineering Social sciences - Mathematics Financial Engineering Mathematics in Business, Economics and Finance
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter1 Introduction -- Chapter2 The Principles of Algorithmic Differentiation -- Chapter3 Applications to Finance -- Chapter4 Automated Algorithmic differentiation -- Chapter5 Derivatives to Non-inputs and Non-derivatives to Inputs -- Chapter 6 Calibration.
Sommario/riassunto	This book provides the first practical guide to the function and implementation of algorithmic differentiation in finance. Written in a highly accessible way, Algorithmic Differentiation Explained will take readers through all the major applications of AD in the derivatives setting with a focus on implementation. Algorithmic Differentiation (AD) has been popular in engineering and computer science, in areas such as fluid dynamics and data assimilation for many years. Over the last decade, it has been increasingly (and successfully) applied to financial risk management, where it provides an efficient way to obtain financial instrument price derivatives with respect to the data inputs. Calculating derivatives exposure across a portfolio is no simple task. It requires many complex calculations and a large amount of computer power, which is prohibitively expensive and can be time consuming. Algorithmic differentiation techniques can be very

successfully in computing Greeks and sensitivities of a portfolio with machine precision. Written by a leading practitioner who works and programmes AD, it offers a practical analysis of all the major applications of AD in the derivatives setting and guides the reader towards implementation. Open source code of the examples is provided with the book, with which readers can experiment and perform their own test scenarios without writing the related code themselves.
