



MODELING AND SIMULATION OF MINERAL PROCESSING SYSTEMS 2ND EDITION

BY R.P. KING
EDITED BY C.L. SCHNEIDER AND E.A. KING
Book plus CD

2012, 492 pages, 3 lbs
ISBN-13: 978-0-87335-345-8
Book Order No. 345-8

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Quantitative modeling techniques and methods are central to the study and development of process engineering, including mineral processing. Models in mineral processing have been difficult to develop because of the complexity of the unit operations that are used in virtually all mineral recovery systems.

The author covers the field of quantitative modeling of mineral process equipment and uses models to simulate the actual behavior of ore dressing and coal washing equipment in industrial practice. Many examples are included to explain the application of some of the commonly used models, most of which described in the book are included in the ModSim software, the plant-wide simulator that is included on the companion CD.

The simulator is an important part of the book. Almost all of the models described are not amenable to normal mathematical solutions or easy computation using calculators or spreadsheets. The simulation techniques done with ModSim allow complex problems to be tackled with minimal time and expense.

In many instances, model structure is related to the underlying physical processes that govern the behavior of particulate material in the processing equipment. Predictive models are emphasized throughout and, when combined, can be used to simulate the operation of complex mineral processing flowsheets.

The material is presented in an instructional style that helps the reader learn the wide variety of modeling methods that have evolved in this field. Each chapter of the book includes a historical perspective that provides an enlightening perspective for researchers starting new topics in the area.

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- Introduction
- Particle Populations and Distribution Functions
- Mineral Liberation
- Size Classification
- Comminution Operations
- Solid-Liquid Separation
- Gravity Separation
- Magnetic Separation
- Flotation
- Simulation of Ore Dressing Plants

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