Mathematical Modelling and Computer Simulation of Activated Sludge Systems

Updated Second Edition now available here! [1]

This international, comprehensive guide to modeling and simulation studies in activated sludge systems leads the reader through the entire modeling process – from building a mechanistic model to applying the model in practice.

This book will:

- enhance the readers' understanding of different model concepts for several (most essential) biochemical processes in the advanced activated sludge systems,

- provide extensive and up-to-date coverage of experimental methodologies of a complete model parameter estimation (longitudinal dispersion coefficient, influent wastewater fractions, kinetic and stoichiometric coefficients, settling velocity, etc.),

- summarize and critically review the ranges of model parameters reported in literature,

- compare the existing protocols aiming at a systematic organization of the simulation study,

- outline the capabilities of the existing commercial simulators,

- present documented, successful case studies of practical model applications as a guide while planning a simulation study.

The book is organized to provide a general background and some basic definitions, then theoretical aspects of modeling and finally, the issues important for practical model applications.

Mathematical Modelling and Computer Simulation of Activated Sludge Systems can be used as supplementary material for a graduate level wastewater engineering courses and is useful to a wide audience of researchers and practitioners. Experienced model users such as consultants, trained plant management staff may find the book useful as a reference and as a resource for self-guided study.
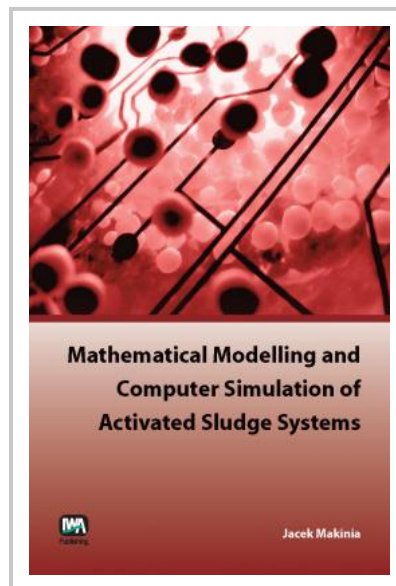
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