Physical-Chemical Treatment of Water and Wastewater

The books currently available on this subject contain some elements of physical-chemical treatment of water and wastewater but fall short of giving comprehensive and authoritative coverage. They contain some equations that are not substantiated, offering empirical data based on assumptions that are therefore difficult to comprehend. This text brings together the information previously scattered in several books and adds the knowledge from the author's lectures on wastewater engineering.

Physical-Chemical Treatment of Water and Wastewater is not only descriptive but is also analytical in nature. The work covers the physical unit operations and unit processes utilized in the treatment of water and wastewater. Its organization is designed to match the major processes and its approach is mathematical. The authors stress the description and derivation of processes and process parameters in mathematical terms, which can then be generalized into diverse empirical situations. Each chapter includes design equations, definitions of symbols, a glossary of terms, and worked examples.

One author is an environmental engineer and a professor for over 12 years and the other has been in the practice of environmental engineering for more than 20 years. They offer a sound analytical mathematical foundation and description of processes. Physical-Chemical Treatment of Water and Wastewater fills a niche as the only dedicated textbook in the area of physical and chemical methods, providing an analytical approach applicable to a range of empirical situations.

Contents

- Introduction
- Characteristics of Water and Wastewater
- Quantity of Water and Wastewater
- Constituents of Water and Wastewater
- Unit Operations of Water and Wastewater Treatment
- Flow Measurements and Flow and Quality Equalizations
- Pumping
- Screening, Settling, and Flotation
- Mixing and Flocculation
- Conventional Filtration
- Advanced Filtration and Carbon Adsorption
- Aeration, Absorption, and Stripping
- Unit Processes of Water and Wastewater Treatment
- Water Softening
- Water Stabilization
Coagulation
- Removal of Iron and Manganese by Chemical Precipitation
- Removal of Phosphorus by Chemical Precipitation
- Removal of Nitrogen by Nitrification-Denitrification
- Ion Exchange
- Disinfection

Publication Date: 31/07/2002
ISBN13: 9781843390282
Pages: 784

Print:
Standard price: £109 / €136 / $164
Member price: £82 / €102 / $123

eBook:
Standard price: £109 / €136 / $164
Member price: £82 / €102 / $123