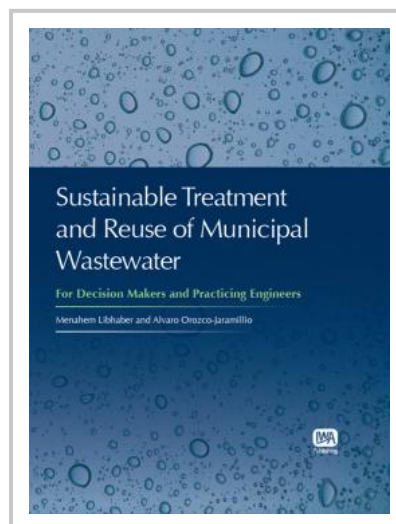


Sustainable Treatment and Reuse of Municipal Wastewater

In many countries, especially in developing countries, many people are lacking access to water and sanitation services and this inadequate service is the main cause of diseases in these countries. Application of appropriate wastewater treatment technologies, which are effective, low cost (in investment and especially in operation and maintenance), simple to operate, proven technologies, is a key component in any strategy aimed at increasing the coverage of wastewater treatment.

Sustainable Treatment and Reuse of Municipal Wastewater presents the concepts of appropriate technology for wastewater treatment and the issues of strategy and policy for increasing wastewater treatment coverage. The book focuses on the resolution of wastewater treatment and disposal problems in developing countries, however the concepts presented are valid and applicable anywhere and plants based on combined unit processes of appropriate technology can also be used in developed countries and provide to them the benefits described.



This book presents the basic engineering design procedures to obtain high quality effluents by treatment plants based on simple, low cost and easy to operate processes. The main message of the book is the idea of the ability to combine unit processes to create a treatment plant based on a series of appropriate technology processes which jointly can generate any required effluent quality. A plant based on a combination of appropriate technology unit processes is still easy to operate and is usually of lower costs than conventional processes in terms of investment and certainly in operation and maintenance.

Chapters in the book are organized in a practical and accessible way to:

- demonstrate selected unit process of appropriate technology and provide the scientific basis, the equations and the parameters required to design the unit processes, with some innovations developed by the authors.
- highlight design procedures for selected combined processes which are in use in developing countries.
- propose an innovative Orderly Design Method (ODM), which is easy to follow by practicing engineers, using the equations and formulas developed, once the fundamentals of each unit and combined process have been established.
- provide a numeric example for the basic design of each selected appropriate technology process for a city with a population of 20,000 using the ODM and an Excel program which will be provided to the readers for download from an online web page.

This book is a valuable and practical resource for all wastewater treatment engineers in field and the operational managers of waste treatment facilities.

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