

In Situ Bioreclamation: Applications and Investigations for Hydrocarbon and Contaminated Site Remediation, edited by R.E. Hincbee and R.T. Olfenbuttel, Butterworth-Heinemann, Stoneham, MA, 1991, ISBN 0-7506-9301-0, 623 pp. (includes following book), \$150.00.

This book is one of two volumes (the other is *On-Site Bioreclamation: Processes for Xenobiotic and Hydrocarbon Treatment*) that resulted from an international symposium held in San Diego, California, in March 1991.

The contributions are found in two different formats: articles and technical contributions. Articles (23 in number) represent (according to the editors) a substantial technical contribution; technical notes (22 in number) are brief technology descriptions or reports of preliminary or less substantial studies. All papers were peer reviewed.

Obviously such a conference covers, by design, a technological wide area. Some of the topics reported include:

- European bioreclamation practices
- Fuel-contaminated soils bioremediation
- Oxygen delivery; hydrogen peroxide sources
- BTEX biodegradation
- Bioventing
- Soil vapor extraction
- Coke oven plant site bioremediation
- Modeling bioremediation
- Metal polluted soils decontamination

The papers range from basic research to engineering design and they cover a wide variety of contaminants (benzene, toluene, ethylbenzene, hydrocarbons, metals, fossil fuel, PAHs, oil, aromatic hydrocarbons and jet fuel): Not neglected is theory, especially numerical modeling.

Unlike most conference proceedings, this book is typeset and contains an extensive index.

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On-Site Bioreclamation: Processes for Xenobiotic and Hydrocarbon Treatment, edited by R.E. Hincbee and R.T. Olfenbuttel, Butterworth-Heinemann, Stoneham, MA, ISBN 0-7506-9302-9, 1991, 539 pp. (includes above book), \$150.00.

This second volume of conference proceedings contains 22 articles and 13 technical notes also covering a wide range of topics as illustrated below.

- U.S. EPA bioremediation program
- Trichloroethylene biodegradation
- Fixed film reactors
- Slurring phase bioremediation
- Packed column bioreactor for air stripper off-gas
- Anaerobic treatment
- PCB degradability
- Phenol biosensors

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Chemical Oxidation: Technologies for the Nineties, by W.W. Eckenfelder, Jr., A.R. Bowers and J.A. Roth, Technomic Publishing, Lancaster, PA, 1991, ISBN 0-87762-895-5, 313 pp., \$65.00.

In the preface the authors write:

“New regulations governing the discharge of toxic pollutants has focussed increased emphasis on physical-chemical technologies which can treat these pollutants in a cost-effective manner. Foremost among these technologies is chemical oxidation.

While chemical oxidation technology has been known and used for many years, the application to wastewater treatment is relatively recent.”

Recent this technology is and needed too. More stringent U.S. EPA discharge guidelines for both direct discharges (to bodies of water) and indirect discharges (to sewers), are compelling industry to seek cleanup processes far more efficient than historically used biological systems.

The volume contains 23 papers presented at symposium held at Vanderbilt University in February 1991. They cover a wide range of topics from very basic research to operating system description.

Oxidants discussed include: hydrogen peroxide, ozone, chlorine dioxide, and potassium permanganate. Chemicals destroyed include NO_x , phenols, and other aromatics in the following media: ground water, soil, and industrial wastewater, respectively.

Taken together, the published papers present an excellent overview of the field. The wide variety of papers are certainly up-to-date, generally well written (with the minor exception that some papers could have been improved by editing), and comprehensive. Anyone seriously interested in the field of chemical oxidation will want to obtain these proceedings — and the successor volume, which I hope will follow a 1993 conference on the same topic.

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