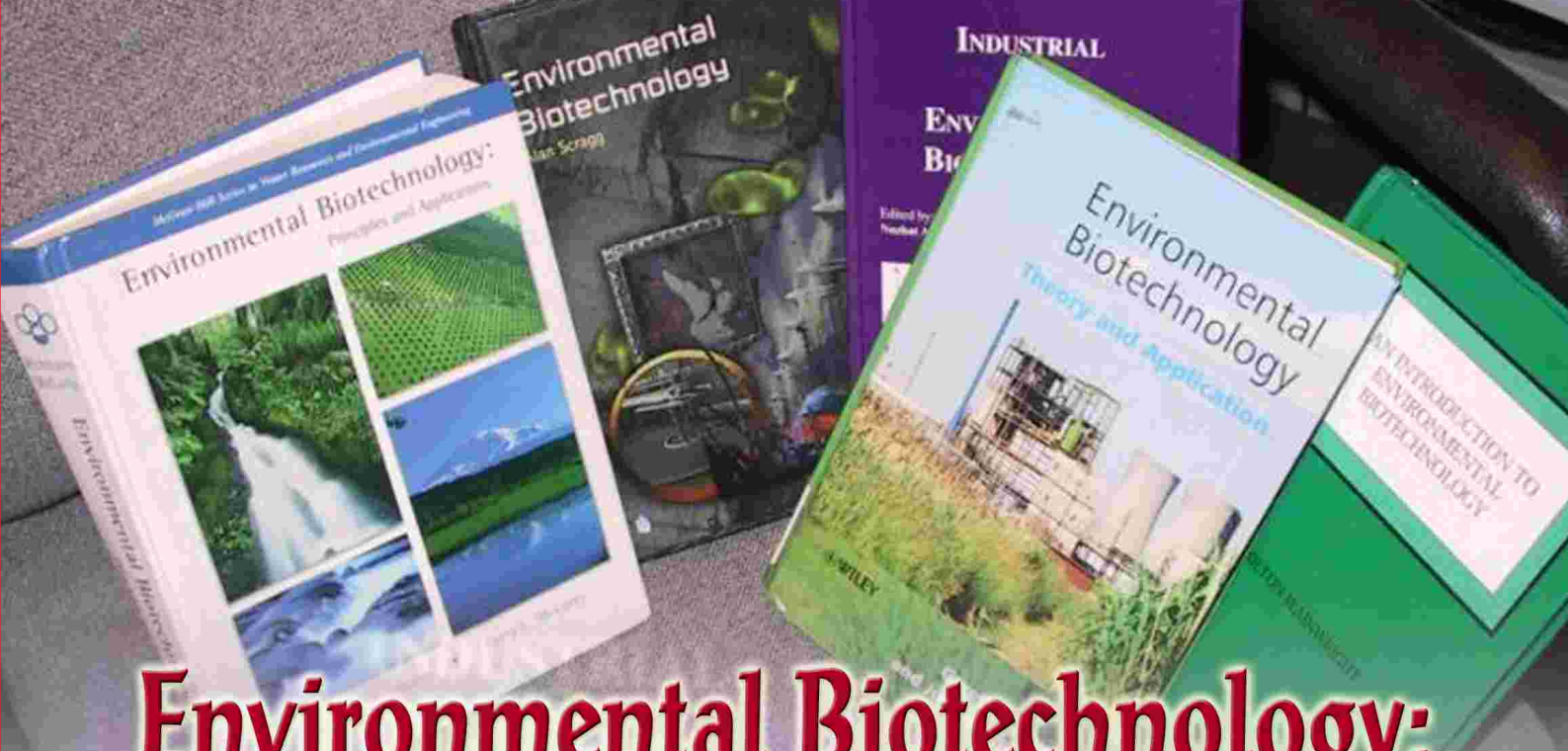

Environmental Biotechnology:

A quick review of some recent books

Environmental Biotechnology is a topic that has come of age only in recent years. It has been given a new urgency because of the realisation that sustainable development requires that the environment is not destroyed in the name of progress. Improvements have to be made to current practices that improve environmental quality, including the prevention of pollution to the environment, cleaning up contaminated environments, and generating valuable resources for human society.

Scragg, A.H., 2004 (1) offers a comprehensive yet readable take on Environmental Biotechnology. It is particularly useful as a book for undergraduate readers especially for middle to final year university students. It includes a chapter on Environmental Monitoring and Sewage Treatment that is lacking in the other books on the list below. It also has a chapter on natural resource recovery that touches on microbially enhanced oil recovery (MEOR) which should be of particular interest to those in the oil industry.

Evans, G. and Furlong, J., 2003 (2) provides an easy to read and less technical format that is suitable for those with no background in biotechnology. It includes a chapter on genetic manipulation for those who want a not too difficult introduction to the topic. It also includes some interesting references to case studies. This book includes treatment processes involving plants, phytoremediation and phytology, which are not so well covered in other similar books. There is also a chapter dedicated specifically to contaminated land and bioremediation.

Rittman, Be.E., and McCarty, P.L., 2001 (3) is particularly suitable for Chemical Engineers who need to have a greater in-depth knowledge of the biological systems behind the engineering processes and equipment used in industrial wastewater management. It provides a detailed introduction to the basics in microbiology as well as other aspects of biological systems such as bioreactor design. There is a particularly interesting chapter dedicated to the detoxification of hazardous chemicals, followed by another on the application of bioremediation. The focus here is on providing an understanding for the design of microbiological processes used in environmental engineering. It is geared towards graduate Chemical Engineering students although final year undergraduate students may also benefit. It is the heaviest reading and the longest of the books reviewed.

Ahmed, N., Qureshi, F. and Khan, O., 2001 (4) is a collection of articles on specialist topics rather than a textbook. It reads more like a journal than a book, and tends to focus on experimental procedures and discussion of results. It starts off with a chapter on molecular biology, followed by biotreatment of phenol in the pharmaceutical industry. It spins out of orbit in the final chapter that looks at mental disorders. Not recommended.

By Gregory Poi

References:

1. Scragg, A.H., 2004, *Environmental Biotechnology, 2nd ed.,* Oxford, N.Y., Oxford University Press.
2. Evans, G. and Furlong, J., 2003, *Environmental Biotechnology; theory and application,* John Wiley and Sons, Ltd, The Atrium, Southern Gate, Chichester, West Susex, England.
3. Rittman, Be.E., and McCarty, P.L., 2001, *Environmental Biotechnology: Principles and Applications,* The McGraw-Hill Companies, Inc.
4. Ahmed, N., Qureshi, F. and Khan, O., 2001, *Industrial and Environmental Biotechnology,* Horizon Scientific Press, Norfolk, England.

These books are available at the Singapore Polytechnic Library.