

ethylbenzene and xylenes, polycyclic aromatic hydrocarbons, pesticides and herbicides, metals, and radioactive materials. A partial list of the projects is as follows:

1. In situ soil treatment: soil vapor extraction, photocatalysis, electrokinetic remediation.
2. Ex situ soil treatment: bioremediation, thermal desorption.
3. In situ groundwater treatment: DNAPLs, bioremediation, cosolvent flushing, permeable reactive barriers, phytoremediation.
4. Ex situ groundwater treatment: pump-and-treat soil vapor extraction, pump-and-treat in situ chemical oxidation and soil vapor extraction.
5. Ex situ debris–solid media treatment: reactor surface contaminant stabilization, lead TechXtract chemical decontamination, En-Vac robotic wall scabbler.
6. Containment: alternative landfill capping, contaminated soil pile polymer capping.

My copy of this book was accompanied by a CD-ROM which contained reports of 313 remediation technology case studies including the 29 reports in Volume 6 cited above. This volume contains an appendix summarizing these 313 studies with the following information given for each: site name, location; cleanup technology; media; contaminants; year operation began and year published.

When I received my copy of the book, the U.S. EPA also sent me two interesting flyers. The first entitled the Field Analytic Technologies Encyclopedia (FATE) is an on-line encyclopedia developed jointly by the U.S. EPA and the U.S. Army Corps of Engineers that provides information about the many tools that are now available to streamline site investigation and cleanup. FATE includes up-to-date information about technologies that can be used in the field to characterize contaminated soil and groundwater, monitor the progress of remedial efforts, and support decisions about site cleanups. It also has relevant and useful resource links and downloadable training modules. Its website is <http://www.epa.gov/tiofate/clu-in.org>.

A second inclusion with my book was a page discussing internet seminars: technical presentations delivered to your desktop. These seminars are live, 2-h events covering various technical topics related to hazardous waste characterization, monitoring, and remediation. Past seminars are archived and may be retrieved at U.S. EPA's website <http://clu-in.org/studio>. Archived topics include seminars on: field analytical technologies for VOCs in groundwater, enhanced in situ bioremediation of solvents in groundwater, in situ chemical oxidation, permeable reactive barriers, and phytotechnologies. The foregoing is only a partial list of the 12 seminars in EPA's database.

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Ammonia Plant Safety & Related Facilities

Richard B. Strait (Ed.), American Institute of Chemical Engineers, New York, NY, 2002, US\$ 250.00, 322 pp., 8 × 11 format, ISBN 0-8169-0878-8

This book contains 29 papers presented at the AIChE's 46th Annual Ammonia Safety Symposium which was held in Montreal, Que., Canada, in September 2001. The sympo-

sium's purpose was to assist AIChE's Ammonia Safety Committee in "making plants that manufacture ammonia and related chemicals such as urea, nitric acid, ammonium nitrate, and methanol, as safe as possible." The papers published in the symposium volume were presented by speakers from 14 countries. The papers covered a wide variety of safety-related topics such as:

- compressor failure;
- lifetime assessment of plants;
- risk-based assessment;
- inspection strategy;
- welds;
- retrofit experience;
- *Legionella pneumophila* in cooling towers;
- fire in a secondary reformer;
- ammonia venting study;
- primary reformer failure;
- LTS catalyst design;
- energy savings.

Most papers are followed by a synopsis of the question and answer session following the presentation.

The book provides the latest information by experts in the field on important safety and operational issues. AIChE is to be commended for continuing this series and thereby enhancing markedly the safety of chemical plants and their operation.

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The Particulate Air Pollution Controversy: A Case Study and Lessons Learned

Robert F. Phalen (Ed.), Kluwer Academic Publishers, Boston, MA, 2002, US\$ 56.00 (EUR\$ 58.401), 141 pp., ISBN 1-40207-225-2

The preface to this short, but excellent book states: "small invisible particles in the urban air, by human activities, especially those produced debate, regulation, have recently stimulated intense scrutiny, and legal proceedings. The stakes are high, both with respect to health impacts and economic costs, and the methods used previously to resolve similar issues are no longer adequate. Everyone on earth inhales thousands to millions of particles in each breath, particulate matter (PM)—so if urban particulate pollution—is significantly hazardous, the negative impact on health could be staggering...This complex issue presents opportunities for critically assessing the relevant knowledge and for adopting more rigorous approaches to this and similar problems.

What is the PM controversy, and why is it a good case study for how science and public policy might better interface? The PM controversy is the sum of the frequently heated debates related to the potential health risks from urban PM. The debates in the scientific, political, legal, and public arenas have placed pressure on scientists and regulators to generate