Plasma Science and the Environment

Wallace Manheimer, Linda E. Sugiyama, and Thomas H. Stix

THE STUDY OF THE HUMAN IMPACT ON THE ENVIRONMENT occupies a central role in contemporary scientific research—a role that is continually expanding to draw in an ever-wider range of disciplines. One area proving to be an exceptionally rich source of applications to pervasive environmental problems is plasma physics—the study of ionized gases.

Plasma Science and the Environment describes important advances on environmental issues made by researchers in plasma physics and its associated fields of fluids, gaseous chemistry, lasers, microwaves, and electron beams. Written by some of the world's foremost plasma science experts, the articles here range from the global perspective of climate and atmospheric change to new developments in energy efficiency and conservation to key applications in waste treatment and reduction. Specific topics include:

- ionospheric modification
- atmospheric sensing via gyrotrons and lasers
- removing CFCs from the atmosphere
- convection towers for electric power and reducing air pollution
- environmental aspects of lighting plasmas
- hot and cold plasma waste processing
- electron scrubbing of flue gases
- processing hazardous chemicals with silent electrical-discharge plasmas
- accelerator-based systems for destroying plutonium

Clearly written, up to date, and extensively referenced, *Plasma Science and the Environment* introduces nonspecialists to a fascinating field of scientific endeavor. Readers will gain a broader understanding of some of the most crucial problems facing the modern world, and will see how specialists in a particular area of physics are working to solve them.

ABOUT THE EDITORS

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