



## Preface

An increasing concern of industrialized nations is the disposal of municipal solid waste, a diverse mixture of domestic, commercial, and institutional waste. The United States alone generates waste at approximately 196 million tons per year. Escalating landfill costs, tighter siting constraints, shrinking land availability, and scarcity of effective recycling and waste minimization programs have contributed to a waste disposal crisis. In an effort to reduce the volume of waste disposal in landfills, many waste management facilities have turned to combustion technology. Municipal waste combustion can substantially reduce the volume and the weight of waste produced and lessen the need for storage in shrinking landfill space.

In recent years, intense local opposition to the construction of incinerators has escalated as a result of fears surrounding their potential human health and environmental impact. Assessment of related health risks has become the focus of a number of recently initiated studies. This volume of the *Journal of Hazardous Materials* focuses on issues surrounding the status of municipal waste incinerators including: industry overviews; pollution emission factors; control technologies; human health implications; comparisons with recycling; and disposal of ash residues.

An international perspective of municipal waste incineration is provided for the United States, West Europe, Asia, and the former Soviet Union. Several authors report on stack emissions from municipal waste incinerators, with a particular focus on mercury and other metals. Aucott and Winka report on the New Jersey Mercury Emissions Standard Setting process. Morris and Lea provide information on recycling versus incineration, including the degree of energy- and cost-savings in the recycling and/or land filling of plastics. Several authors provide an analysis of the political and environmental equity issues related to municipal waste incineration siting.

Finally, a major obstacle to public acceptance of new municipal solid waste incinerators are problems associated with disposal of the ash generated during the incineration process. Incinerator ash contains leachable metals and salts that can adversely effect groundwater, surface water, and soil quality. Four of the authors report on the current knowledge regarding leaching of metals and the current legal ramifications of regulation.

As available landfill space continues to shrink and the public environmental concerns increase, solid waste disposal will continue as a top priority problem for communities around the world and municipal solid waste incineration is one viable alternative. While much research remains to be done on the impact of solid waste

incineration on the environment and surrounding communities, the material presented in this issue is intended to provide some clarification and to stimulate further research in this important area.

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