



Abstract for “Developing Strategies to Accelerate Federal Agency Environmental Cleanup”  
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### **Microwave Processing of Organics in Transuranic Wastes as an Alternative to Incineration**

Environmental Waste International, Ajax, Ontario, Canada

EWI has developed a process, utilizing microwave energy in a nitrogen atmosphere, to de-polymerize or carbonize organic wastes. To date, the patented process has been successfully applied to the treatment of scrap tires and biomedical waste. Due to the similar nature of certain low level and transuranic wastes to biomedical materials, it is argued that microwave processing may be a feasible method to reduce radwaste volumes and to breakdown organic contaminants. This makes the waste more stable prior to final storage.

EWI believes this technology is applicable to the treatment of organic-based radioactive wastes such as ion exchange resins, contaminated soils and transuranic wastes from labs and pilot plants. The technology offers the advantages of:

- Low temperature processing whereby the chamber temperature does not exceed 300C, yet effectively treating the wastes. This eliminates the need for an expensive refractory lining
- A nitrogen atmosphere to minimize the formation of dioxins and furans
- Low gas flow to reduce the potential for particulate entrainment in the discharge gases
- Efficient, highly controllable and focused energy source
- Fast processing time
- Small system footprint compared to other thermal processes
- Ability for the process to be made mobile

EWI will present results of its development work on biomedical wastes and concepts for radwaste treatment.

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