Pilot-Scale Laboratory Waste Treatment by Supercritical Water Oxidation

Yoshito Oshima*, Rumiko Hayashi1 and Kazuo Yamamoto2

Department of Environmental Systems, Graduate School of Frontier Sciences,
The University of Tokyo, Tokyo, Japan
1Department of Chemical System Engineering, Graduate School of Engineering,
The University of Tokyo, Tokyo, Japan
2Environmental Science Center, The University of Tokyo, Tokyo, Japan

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Supercritical water oxidation (SCWO) is a reaction in which organics in an aqueous solution can be oxidized by O2 to CO2 and H2O at a very high reaction rate. In 2003, The University of Tokyo constructed a facility for the SCWO process, the capacity of which is approximately 20 kl/year, for the purpose of treating organic laboratory waste. Through the operation of this facility, we have demonstrated that most of the organics in laboratory waste including halogenated organic compounds can be successfully treated without the formation of dioxines, suggesting that SCWO is useful as an alternative technology to the conventional incineration process.

*E-mail address: oshima@k.u-tokyo.ac.jp