

Pacifichem Selected Abstracts

Sunday, Dec. 18 PM - Poster Presentations				
Presentation Time/ Session Start Time	Location	Prog. #/Type	Authors Institutions	Abstract Title Session #/Title
Sunday, Dec. 18, 8:00 PM - 10:00 PM/ 8:00 PM	Hilton Hawaiian Village - Coral Ballroom 3/5	750 Poster	<u>K.Sugimoto</u> ¹ ; D.A.Ahmed ¹ ; T.Suzuki ² ; S.Kaneco ¹ ; H.Katsumata ¹ ; K.Ohta ¹ 1. Department of Chemistry for Materials, Mie University, Tsu, Mie, Japan; 2. Environmental Preservation Center, Mie University, Tsu, Mie, Japan	Continuous dehalogenation of trihalomethanes in a flow system using metallic powder under mild conditions 695 Treatment of Persistent Organic Pollutants (POP) (#165) [PS]

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Continuous dehalogenation of trihalomethanes in a flow system using metallic powder under mild conditions

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Program Number: 750

Presentation Time: Sunday, Dec. 18, 8:00 PM - 10:00 PM

Location: Hilton Hawaiian Village - Coral Ballroom 3/5

Halogenated organic solvents have extensively been used for several decades in industrial applications such as the manufacture of refrigerants, herbicides, plastics and solvents. Due to leaks, spills and releases from industrial sources, they inevitably contaminate environments such as soil and groundwater. Therefore, many of these halogenated aliphatics are listed as priority pollutants by the United States Environmental Protection Agency (USEPA) and known or suspected human carcinogens, mutagens or toxins. Recently, the environmental application of zero-valent iron was proposed for the removal of chlorinated compounds from water. Clearly, the use of zero-valent metals has been an active research area with efforts mostly concentrated on iron-containing water system due to the success encountered with iron-loaded subsurface permeable walls and the acceptance of zero-valent iron as being safe for the environment. In the present work, a low-cost and highly effective dehalogenation system of trihalomethanes has been developed in a continuous flow system using metallic powder under mild conditions. Many factors, such as the amount of metallic powder, kind of the powder and reaction temperature, affected on the dehalogenation were evaluated. In addition, the mechanism of the dehalogenation is discussed. This research will be able to contribute to the treatment technology of trihalomethane-contaminated ground water.

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