

## Gasification of Acetic Acid in Supercritical Water over Activated Charcoal

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Annually, more than 5 million ton of food waste is generated in Korea. The food waste can be characterized by high moisture content (>85%) and rapid bio-degradation. Biological decomposition of the food waste results in the formation of high organic acids dissolved in water. Therefore, the food waste can be easily separated to liquid and solid phases by dewatering process. Solid fraction of the waste can be utilized as an animal food or organic fertilizer through further treatments. Liquid fraction of the waste is mostly treated by dumping it into the ocean or by wastewater treatment processes. However, disposal of the food-derived wastewater by ocean dumping is expected to be inhibited from 2013. It is needed to find new methods for the treatment of the wastewater. In this work, as an alternative method to the ocean dumping, supercritical water gasification technology was applied to treat the wastewater. Acetic acid was chosen as a model compound for organic acids in the wastewater. Effect of reaction conditions such as temperature and reactor residence time on the extent of gasification, COD destruction, and yield of major product was examined in a continuous flow reactor packed with activated charcoal.