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Influence of Sodium Carbonate on Decomposition of Formic Acid by Discharge inside Bubble in Water MASASHI IWABUCHI, KATSUYUKI TAKAHASHI, KOICHI TAKAKI, NAOYA SATTA, Iwate University — An influence of sodium carbonate on decomposition of formic acid by discharge inside bubble in water was investigated. Oxygen or argon gases were injected into the water through a vertically positioned glass tube, in which the high-voltage wire electrode was placed to generate plasmas at low applied voltage. The concentration of formic acid was determined by ion chromatography. In the case of addition of sodium carbonate, the pH value increased with decomposition of the formic acid. In the case of oxygen injection, the increase of pH value contributed to improve an efficiency of the formic acid decomposition because the reaction rate of ozone and formic acid increased with increasing pH value. In the case of argon injection, the decomposition rate was not affected by the pH value owing to the high rate constants for loss of hydroxyl radicals.

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