

Abstract Submitted
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Selective reactions of reduction and oxidation by bubble supply via electrolysis and successive plasma generation in aqueous solution OS-AMU SAKAI, Kyoto University, KYOTO UNIVERSITY TEAM — Plasmas in liquids were generated in bubbles of hydrogen and oxygen through electrolysis of aqueous solutions to create reaction fields which can be selected for reduction and oxidation. This chemically-active spaces work as decomposers of both CO₂ and organic compounds. CO₂ was transferred into CO and methane through hydrogen plasma generation, mainly due to reduction reaction by atomic hydrogen and also via dissociative attachment of electrons. We also observed phenol decomposition by generation of oxygen plasmas. These results confirm that synthesis of electrolysis and plasmas in liquids allows us to obtain on-demand chemical fields for oxidation and reduction.

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