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Plasma Bubbles: A path to Green Chemistry

Tuesday, 19 September 2023 09:45 (30 minutes)

The interface between plasma and liquid plays an important role in the generation and transfer of reactive species. Plasma bubbles offers the means of providing energy efficiency and enhanced mass transfer facilitating effective and competitive scaling of plasma systems for energy applications. A number of green chemistry examples will be presented including; Example One will focus on the plasma bubbles-enabled water purification, which will emphasize the significance of plasma bubble characteristics for transferring oxygen reactive species, particularly superoxides; Example Two will focus on the plasma bubbles for ROS production (H2O2), with the further improvement of H2O2 yield by photocatalysis; Example Three will focus on the plasma bubbles for RNS production (NOx) and the combination of electrochemical catalysis for ammonia production. The potential of combining plasma bubbles with catalysts will be outlined.

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