

Abstract Submitted  
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**Properties of plasma-liquid system with transversal discharge**

VOLODYMYR SHAPOVAL — Description of different plasma-liquid systems and their comparative analysis are presented in this work. There are various types of self-sustained electrical discharges with electrodes submerged into liquid, and discharges with one “liquid” electrode as well as secondary discharges with “liquid” electrodes, which can be applied for water treatment. This dynamic plasma-liquid systems have well-developed plasma-liquid interface and large surface-to-volume ratio. Plasma-liquid system based on the discharge in the gas channel formed by the gas flow immersed into the liquid was studied in this work. Phenol solutions were used as working liquids. It was shown that investigated plasma-liquid system is very effective for the phenol destruction in water due to the formation of chemically active oxidants in sufficient amount. The efficiency of phenol destruction increases with increasing of the time of plasma-chemical processing in the reactor. It was shown that regime with negative polarity of “liquid” electrode is more effective for plasma-chemical processing than with positive polarity.

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