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A Study on Improvement of Ozone Generator using Diamond Electrode

붕소가 도핑된 다이아몬드 전극을 이용한 오존발생기의 성능향상에 관한 연구

김규식, Yasuaki Einaga*, Akira Fujishima*, 박수길
충북대학교 공업화학과, *동경대학 응용화학부

Boron-doped conducting diamond thin films were applied as anode for generating ozone gas by electrolysis of acidic solution. Electrochemical cell and ozone generating system that circulate electrolyte in system were designed for decreasing the temperature of the system, which was elevated during the reaction. In order to determine the ozone generation properties of diamond electrode, experimental conditions, electrolyte concentration, temperature, flow rate, reaction time and cathode material, were varied diversely. In order to improve the cell performance, we changed experimental condition variously including addition of F^- ion into electrolyte. As a result, we have succeeded to generate ozone gas effectively. Furthermore, properties of the diamond electrodes were kept its stability even after long time operation in comparison with PbO_2 electrode.

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