

### Electrosorption Behaviors of Nitrate Ions

정중현\*, 이유리<sup>1</sup>, 문제권, 조영환, 오원진, 유승곤<sup>1</sup>  
한국원자력연구소; <sup>1</sup>충남대학교  
(nchjung@kaeri.re.kr\*)

Nitrate component is one of the major water quality problems due to their adverse effects on environment.

Electrochemical reduction or ion exchange technique has been used as a conventional method to remove the nitrate. But removal capacity by ion exchange is not so high to satisfy the unlimited release to the environment and electrochemical reduction have a drawbacks of operation at an high reduction potential. One of the efficient methods to treat the nitrate-containing waste is the electrosorption.

In this study, we conducted the experiments on the adsorption of nitrate component to investigate the application feasibility of the electrosorption technique using ACF as a good conductive electrosorption adsorbent. Electrosorption behaviors of nitrate component was investigated using a batchwise electrochemical cell. ACF felt used as a working electrode and an adsorbent were wound around a graphite rod(current collector) and dipped in the test solution. Effective removal is accomplished by applying a positive potential in the range of 0.5 to 0.9V(vs SCE) to ACF electrodes. Electrosorption of nitrate exhibits a strong pH dependence and is affected by existence of any other anions.