

SAPO-34 로 변형된 전극의 전기화학적인 연구
Electochemical Studies at SAPO-34 Modified Electrodes

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This method is another application of zeolites as used for electrocatalysts, the voltammetric behavior of various analytes was examined at zeolite-modified electrodes in aqueous solution. The study is covered as the preparation of the modified electrodes and electrochemical response. We would like to consider the ability to concentrate or exclude analytes from dilute solution, the relation between the peak current and the concentration of analytes. Additionally this work is performed with the selectivity toward some analytes. Used analytes are as follows: Co(II), Ni(II), Cd(II), Pd(II), Cu(II), and Pb(II). The modified preparation is included to cast an bare electrode coating from a suspension of zeolite(SAPO-34) particles and dissolved polymer. After the solvent evaporation, the polymer is enfolded the zeolite and is helpful to hold together on the surface, which looks like as the zeolite/polymer modified electrode. The modified surface was stable for at least one week when stored in an electrolyte between experiments.

Zeolite(SAPO-34), having the framework topology of the natural zeolite chabazite, consists of narrow pores (0.43 nm) and cavities (1.1 nm x 0.65nm) extending in three dimensions. The small pore is accommodated with some cations, such as Cu(II), Ni(II), and Co(II). Selectivity and competition among the analytes were also examined. As a result, the peak current was correlated with the mobility of electrolyte cations within the zeolite matrix. This means the selectivity of the analytes are closely related to the size of the zeolite channels.