

## ES01

### Adsorptive-Catalytic Stripping Voltammetric Measurement of Ultratrace Molybdenum in the Presence of Cupferron

흡착-촉매 벗김 전압-전류법에 의한 극 미량 몰리브덴 정량

채명준, Joseph Wang\*, 이수영\*\*, Jianmin Lu\*

한양대학교 화학과 \*뉴멕시코 주립대 화학 및 생화학과

\*\*서울산업대학교 정밀화학과

An ultrasensitive stripping voltammetric procedure for ultratrace measurements of molybdenum based on the coupling adsorptive, catalytic and preconcentration processes is described. The combination of adsorptive stripping voltammetry with a two-electron reduction catalytic process provides one of the most sensitive electroanalytical scheme. Such scheme combines the adsorptive accumulation of molybdenum-cupferron complex and the catalytic cycle [ Mo (V)  $\leftrightarrow$  Mo (III)] driven by cupferron as an oxidant.

The extended use of catalytic effect in adsorptive stripping voltammetry to multi-electron reduction steps greatly enhances the catalytic response, and offers a remarkably low detection limit of  $1.0 \times 10^{-12}$  M molybdenum following a 5 min accumulation. Experimental parameters are evaluated for optimal performance.