

## عنوان مقاله:

Hierarchical flowerlike cobalt oxide derived layered double hydroxide on nanoporous anodized aluminum oxide / aluminum film as thin film microextraction sorbent

## محل انتشار:

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## خلاصه مقاله:

Among the available metal oxide as the sorbent for microextraction purposes, cobalt oxide/hydroxide is desirable candidates due to its natural abundance, low cost, large surface-to-volume ratio, good adsorption ability, high stability and environmental compatibility [1]. These unique features of  $\text{Co}_3\text{O}_4$  make it suitable for the extraction or removal of organic compounds in the aqueous samples. In this study, hierarchical flowerlike cobalt oxide coated anodized aluminium foil was prepared by in-situ conversion of fabricated Co-Al layered double hydroxide as template. The Al foil substrate was anodized using fast electrochemical technique such as amperometric method. the, Co-Al-LDH precursor has been fabricated on nonporous anodized aluminum film via the in-situ crystallization technique. The prepared flowerlike cobalt oxide was used as a novel sorbent in thin film microextraction (TFME) method followed by HPLC-UV after its extracted by TFME method. After extraction, the extracting film was eluted using organic solvent to desorb the target analyte. In order to evaluate the extraction ability of the prepared film, diclofenac was selected as model analyte. Therefore diclofenac was determined by high performance liquid chromatography-ultraviolet detection (HPLC-UV). Plackett–Burman design was used for screening the experimental factors of interest. The screened factors were then optimized using Box-Behnken design (BBD). To investigate the capability of the prepared film for determination of diclofenac as analyte in real sample analysis, urine and plasma samples were selected as real samples.

## کلمات کلیدی:

HPLC; Thin film microextraction; Nonoporous anodic aluminum oxide; Diclofenac;  $\text{Co}_3\text{O}_4$

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