



University of zabol
Graduate school
Faculty of science
Department of chemistry

The Thesis Submitted for the Degree of Master of Science
(In the field of Analytical Chemistry)

Title:

**Post-Synthetic Modification of a Covalent Organic
Framework for Effective Organophosphates Removal**

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By:

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Abstract

In this research, a covalent organic framework functionalized with sulfur based on porphyrin was synthesized by post-synthetic modification. This structure has been identified and investigated using various techniques such as FT-IR, PXRD, UV-Vis DRS, BET, SEM/EDX and TGA/DSC. Then, this covalent organic framework was used as an adsorbent to remove and degradation organophosphates from the aqueous sample by visible light prior to measurement by UV-Vis spectrophotometer. The parameters affecting the degradation such as pH of the sample solution, amount of adsorbent, time have been studied and optimized.

Keyword: Keywords: Post-Synthetic Modification, Covalent-Organic Framework, Removal, Degradation, Organophosphate, Porphyrin-Based Covalent-Organic Framework