



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)**

**A novel porphyrin-based porous organic
polymer for removal of palladium ions
from waters**

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Abstract

In this research, a porous organic polymer based on porphyrin (Porphdial) was synthesized. This structure has been identified using various techniques such as Fourier Transform Infrared Spectrophotometry, PXRD, SEM/EDX, BET and TGA. Then this porous solid was investigated as an adsorbent to remove palladium ions from water samples and their analysis was done by Ultra Violet Visible spectrophotometry. The parameters affecting the extraction, such as the pH of the sample solution, amount of adsorbent, detergent volume, and absorption and desorption time were optimized and studied. pH is equal to ۳, stirring time is 20 minutes, amount of adsorbent is equal to 5 mg, and the volume of washing solvent is equal to 0.5 ml, the optimal conditions.

Keywords: Porphyrin-based covalent-organic framework, Porous organic polymer, Adsorbent, Removal, Extraction, Palladium