

## ADSORPTION OF SOME PHENOLIC DERIVATIVES BY SURFACTANT TREATED Al-PILLARED ALGERIAN BENTONITE

O. BOURAS, M. HOUARI and H. KHALAF\*

*Chemical Engineering Department, University of Blida,  
P.O. Box 270-09000, Blida, Algeria*

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Mixed organic–inorganic-bentonite complexes were obtained by adsorption of cetyltrimethylammonium cations onto Al-hydroxy-montmorillonite prepared with bentonite Algerian deposits.

These mixed complexes are characterized by a large interlamellar spacing of about 0.9 nm and small surface area. Their adsorption affinities toward some first class hazardous pollutants i.e. chlorinated phenols were investigated. Adsorption data suggest that their sorptive capacities were enhanced in comparison with natural occurring materials.

*Keywords:* Clay-modified; Al-pillared bentonite; phenols derivatives; bentonite

### 1 INTRODUCTION

Since the first publication on the synthesis and properties of metal pillared smectites by Brindley and Semple [1], extensive work has been reported for the synthesis of various metals pillared clays and their application [2–6].

However, the application of these highly porous materials as adsorbents has been the subject of limited experimental investigations. Although Srinivasan and Fogler [7–9] and Pinnavaia *et al.* [10,11] have found that the sorptive capacities of Al-pillared and delaminated clays, increase toward less water soluble organic pollutants (e.g. chlorinated dioxins, biphenyls and phenols). McBride *et al.* [12], Wolf *et al.* [13], Boyd *et al.* [14] and Stockmeyer [15] have

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\* Corresponding author.