ADSORPTION OF CHROMIUM ION BY

ACTIVATED PLASTER OF PARIS

K.R.Sankar1, S.Parvathy2 and B.R.Venkatraman3\*

1Coromandel International Limited, Pesticides Division, Ranipet, Tamil Nadu, India. Email: krs003@rediffmail.com

2Department of Chemistry, Government Arts College (Autonomous), Salem,

TamilNadu. India. Email: paruchem70@rediffmail.com

3PG & Research Department of Chemistry, Periyar E.V.R.College (Autonomous), Tiruchirappalli, TamilNadu. India. \*Email: brvenkatraman@yahoo.com

The research of the present work was to investigate the removal of chromium ion from aqueous solution by using activated Plaster of Paris (POP). Generally, metal ions are used in chemical, textile, paper, printing, leather, plastics and various food industries. The need for the treatment of metal ion contaminated waste water passed out from the industry. In this study, POP was studied for its potential use as an adsorbent for removal of chromium ions. The various factors affecting adsorption, such as initial metal ion concentration, contact time, adsorbent dose and effect of temperature, were evaluated. The experimental data were fitted into the pseudo-second order kinetic model. The equilibrium of adsorption was modeled by using the Langmuir and Freundlich isotherm models. The objective of the present work suggests the POP may be utilized as a low cost adsorbent for chromium ions removal from aqueous solution.

**Key words**: Activated Plaster of Paris (POP); Chromium; Adsorption isotherm; Kinetics; Equilibrium models.