International J. of Engg. Research & Indu. Appls. (IJERIA).
ISSN 0974-1518, Vol.4, No. III (August 2011), pp 111-122

REMOVAL OF HEXAVALENT CHROMIUM FROM WASTE WATER EFFLUENT BY ELECTROCHEMICAL ION EXCHANGE METHOD

M. SATHIYAMOORTHY, T. SUBASH, K. EYALARASAN AND G. SAROJINI

Abstract

Liquors containing dissolved chromium are used in a number of sectors of Process industries in application such as plating and coating, metal finishing and as oxidizing and reducing agents. Chromium is a hard brittle multivalent metallic element; resistance to corrosion and tarnishing. The most common form is hexavalent chromium, which is highly toxic to human being and to aquatic life, since it causes lung tumor and skin sensitizes. The most of the Countries recently banned the use of Cr (VI). In combination with various physical and chemical methods, electrochemical techniques are most frequently used to improve the recovery of metals from dilute process stream of effluents. In this present investigation an attempt has been made to remove the Cr (VI) by "Electrochemical Ion exchange methods", which combines ion exchange and Electro dialysis is used for the physical removal and concentration of chromate ions from the effluent.

Keywords: Hexavalent Chromium, Electrochemical methods, Effluent treatment, waste water treatment, Ion exchange.