4172208323 : MAJOR CHEMICAL TECHNOLOGY

KEY WORD: DESULFURIZATION / COAL / SUPERCRITICAL ETHANOL

KRITTIKA CHARUTAWAI : DESULFURIZATION OF COAL WITH SUPERCRITICAL ETHANOL-POTASSIUM HYDROXIDE. THESIS ADVISOR : SOMKIAT NGAMPRASERTSITH, Dr. de l' INPT, THESIS CO-ADVISOR : PROF. PATTARAPAN PRASASSARAKICH, Ph.D., 93 pp. ISBN 974-03-1220-9.

Desulfurization of Mae Moh coal with supercritical ethanol-potassium hydroxide in semi-continuous reactor was studied. The effects of temperature, pressure, time and potassium hydroxide on yield and ash and sulfur removal were investigated. The results indicated that coal weight loss and sulfur removal increased with increasing temperature. Potassium hydroxide addition in the range of this study could enhance ash and pyritic sulfur removal but decreased the organic sulfur removal. In this desulfurization process, the reduction of sulfur was in the range of 7.6-89.4% in pyritic sulfur, 1.1-19.6% in organic sulfur and 13.7-47.7% in total sulfur. The optimum condition for total sulfur removal was at 350°C, 8.27 MPa, 30 min and 5 g/l of potassium hydroxide and gave the coal yield of 81.2%, the total sulfur reduction of 47.7% and the ash reduction of 10%