

OXIDATION STUDIES OF TURKISH OIL SHALES AND DETERMINATION OF THEIR KINETIC PARAMETERS

L. BALLICE

University of Ege, Faculty of Engineering,
Department of Chemical Engineering
35100 Bornova, Izmir, Turkey

Kinetics of oxidation of oil shales of Göynük (kerogen type I) and Beypazari (kerogen type II) deposits was investigated under isothermal conditions using a fixed-bed reactor in various temperature modes. Combustion profiles were obtained using a continuous gas analyzer. Rate data were analyzed basing on the assumption that oxidation takes place on the surface of solid oil-shale particles and decomposition of kerogen is not significant. Oxidation rates were determined and constant overall-orders of reaction from the kinetic analysis within investigated heating rates were found. Effect of heating rates on reaching final isothermal temperatures was investigated, and kinetic parameters of the overall oxidation reaction for each heating rate determined.