

## **LIQUEFACTION OF ESTONIAN OIL SHALE KEROGEN IN SUB- AND SUPERCRITICAL ETHER MEDIUM**

### **2. COMPOSITION OF LIQUID PRODUCTS**

H. LUIK, I. BLYAKHINA, L. LUIK

Tallinn Technical University,  
Institute of Oil Shale  
15 Akadeemia Rd., Tallinn 12618, Estonia

*Liquid benzene-soluble products of kukersite kerogen liquefaction in the medium of diethyl ether, dioxane-1,4 and ethylene oxide were separated into asphaltenes, malthenes, phenols, aliphatic and aromatic hydrocarbons, water-soluble neutral oxygen and high-polar compounds. High-molecular compounds separated were submitted to additional pyrolysis to investigate the composition of secondary compounds. Total products, fractions separated from them and pyrolyzates were analyzed by IR spectroscopy and gas chromatography to investigate the effect of various ethers on their chemical modification. The most characteristic similarities and differences between primary and secondary products of liquefaction were established. It was concluded that the final liquid products were formed as a result of thermal decomposition of previously oxyalkylated intermediates, those being different whether ethylene oxide, dioxane-1,4 or diethyl ether were used as liquefaction medium.*