SUMMARY

Coal has been used as a source of energy in the form of solid fuel, thus less economical and not compatible. The solution is to convert coal into liquid fuel. Knowledge of the characteristics of coal is needed to transform coal into liquid products. Characterization of one of the stages of knowing fossil organic compounds contained in coal. Organic geochemical data will provide information about the potential of coal to be converted into liquid products. Samarinda East Kalimantan coal reserves worth has to be converted into liquid fuels. High coal rank and low rank Samarinda extracted. Extraction yield is fractionated by column chromatography to obtain the fraction of aliphatic and aromatic fractions. Aliphatic and aromatic fraction was then identified by means of gas chromatography-mass spectrometer (GC-MS). Aliphatic fraction analysis indicates long chain n-alkanes, isoprenoid, branched alkanes, bicyclic sesquiterpanes, triterpanes and steranes. Fraction analysis showed the content of aromatic compounds perylene and homologous series of methyl esters. All these biomarker compounds have high stability in thermal conditions that can provide a significant contribution to the melting process coal. Besides, the long chain alkane allows a source of short-chain alkanes and cycloalkanes and aromatic compounds as the liquid fuel component. Based on a review of organic geochemical characteristics of high-rank coal and low-rank coal of Samarinda indicates that it has the potential to be converted into liquid products, and the type of low-rank coal has a greater potential to produce liquid fuels.