

Organic Geochemical Study on the Organic Matter Obtained from ODP Site 794A,
East Sea

Sang-il Lee^{1)*} · Young-Joo Lee²⁾ · Ji-Hoon Kim²⁾ · Songsuk Yi¹⁾ · Hyesu Yun³⁾

Ocean Drilling Program Leg 127 in the East Sea has revealed the existence of distinct dark-light colored cycles basinwide. Organic geochemical analyses including Rock-Eval pyrolysis, Elemental analysis and Carbon stable isotope analysis were carried out to evaluate characteristics of organic matter in the ODP Site 794A sediments and to understand paleoceanographic and paleoclimatic changes. The organic geochemical results of this study on the basis of TOC contents, C/N ratio, HI vs. OI, $\delta^{13}\text{C}_{\text{org}}$ and C/S ratio show that dark layers containing a large amount of terrigenous organic matter were deposited under the anoxic conditions, whereas the light layers containing largely marine organic matter were deposited under the oxic conditions.

These results indicate that during the interglacial highstands, increased surface-productivity and decreased deep water circulation due to the input of a large amount of terrigenous organic matter from adjacent continent led to the deposition of dark layers, whereas during glacial lowstands, with the decreased terrigenous organic matter, marine primary production and dilution caused by Kosa from the China desert area led to the deposition of light layers.

Thus the alternation of the dark-light layer in the ODP Site 794A sediments may record the glacio-eustatic sea level changes and adjacent continental climatic changes caused by Northern hemisphere climatic changes.

Key Word : East Sea, Ocean Drilling Program, Organic Geochemistry, Organic Matter, Paleocyanography

1) Petroleum Technology Institute, Korea National Oil Corporation (silee@knoc.co.kr)

2) Petroleum & Marine Resources Research Division,
Korea Institute of Geoscience & Mineral Resources

3) Department of Geology, Chung Nam National University