

# Desorption sequence of organic matter from organo-clay complexes in source rocks

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It has been discovered that the organo-clay complexes could act as a precursor for petroleum generation, and that the adsorption on clay surface do favor for the preservation of the sedimentary organic matters during diagenesis<sup>[1]</sup>. The stability of organo-clay complexed determines the decomposing and desorping of its organic fraction, which are crucial to the generation and primary migration of petroleum. In this study, the Tertiary clayey source rocks in Dongying Basin, eastern China, were sampled, and one natural organo-clay complexes sample and synthesis organo-clay complex were prepared. Besides the structure and infrared spectra analysis, coupling a mass spectrometer to thermal analysis techniques were employed to qualitatively determine the desorping sequence of the organic matter from clay surface. It is found that the desorption temperatures of some organic components are a little higher than the boiling temperature of pure oil (Fig. 1). For example, the ion with  $m/z$  of about 55 is released from complex at 130 °C, whereas the temperature releasing from oil is about 60 °C. In summary, the organo-clay complex could promote the stability of organic matter and retard the primary migration of petroleum from source rocks.

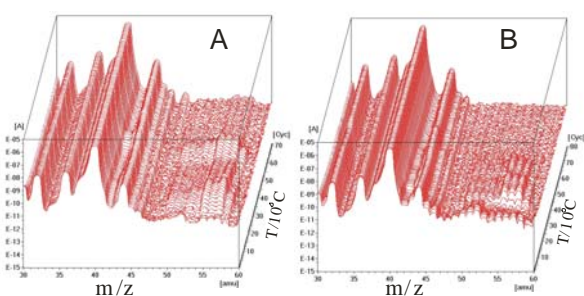


Fig. 1 TA-MS spectra of oil (A) and oil-smectite complex (B)

## Acknowledgement

Authors acknowledge the National Science Foundation of China (No. 40373024 and 40003002).

## References

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