

## 台灣西北部木山層有機質沉積特性

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### 摘要

台灣西部麓山帶包括三個中新世含煤地層,由下而上分別為木山層、石底層和南莊層。因前人研究多集中在中新世中後期,本研究將重心延伸到深層的木山層。在這項研究中將收集來自野外露頭和井下岩屑的樣本。分析方法有 XRD (X光繞射分析), Rock-Eval 熱裂分析, 總有機碳分析 (TOC%) 和鏡煤素反射率 (Ro%)。研究結果發現大部分的錦水和出磺坑井下岩屑樣本屬於低生油潛能、沉積物為 IV 型油母質, 主要原因為大多數樣品成熟度過高使油氣散逸。野外露頭的礦物成分主要由石英, 長石與少量粘土礦物和白雲石組成, 其中粘土礦物成分由伊萊石、高嶺石和綠泥石組成。沉積環境顯示為海相環境, 伊萊石風化程度指標 (Esquevin index) 顯示樣本富含鐵鎂質的伊萊石且為乾旱氣候條件與物理風化作用為主。伊萊石結晶度 (Kubler index) 顯示樣本屬成岩帶。未來工作擬使用井下岩屑資料對沉積環境做進一步探討後進行綜合評估。

## **Depositional characteristics of organic materials in Mushan Formation, NW Taiwan**

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Date : 2018/10/04

### **Abstract**

Western Foothill Belt of Taiwan includes three Miocene coal-bearing formations: namely Mushan, Shihti and Nanchuang Formations from bottom up. Based on previous middle-late Miocene studies, this project will focus on early Miocene Mushan Formation of Chinshui Anticline. Samples from field outcrops and borehole were collected in this study. Analyses include XRD (X-ray diffraction analysis), Rock-Eval Pyrolysis, total organic carbon (TOC%), and vitrinite reflectance (Ro%). We found that most of the Chinshui and Chuhuangkeng borehole samples were poor source rocks with kerogen of type IV, most of samples are overmature to release hydrocarbons. Mineral composition of the outcrop samples consists of quartz, feldspars, clay mineral and dolomite whereas the clay mineral composition consists of illite, kaolinite and chlorite. Depositional sequence is indicated as a marine environment. Esquevin index indicates sample contained Fe-Mg-rich illite with arid climate, physical weathering depositional environment. Kubler index indicate sample in diagenesis zone. In the future, borehole data will be examined for synthetic evaluation of depositional environment.