THE URANIFEROUS BLACK SHALE AND RELATED URANIUM MINERALIZATION FEATURES IN SOUTH CHINA

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Black shales are marine sediments having argillaceous, silty and siliceous compositions, which usually contain high contents of organic materials, disseminated pyrite and uranium. The uraniferous black shales have the uranium content of more than 20 ppm. The black shales are widely distributed in 17 Provinces or Autonomous Regions of Northwestern and Central-Southern China. Their sedimentary ages range from Sinian to Tertiary periods. However, The uraniferous black shales are mainly exposed in Yunnan, Guizhou, Sichuan, Hunan, Hubei, Jiangxi and Zhejiang Provinces and Guangxi Autonomous Region as well in South of China. The economically significant uranium deposits associated with black shales occur in Hunan, Jiangxi Provinces and Guangxi Autonomous Region, which are confined to the Late Sinian and Early Cambrian strata. The uranium related black shale in China is similar to the Alum Shale of Sweden (?), but different from the Chattanooga shale (D) of the United States and the Bakken Shale (D- C1) of Canada. Uranium mineralization associated with black shales have following main features: (1) Stratabound; (2) Controlled by structures such as interlayer and intersected faults and fractures; (3) Different types of mineralizations such as leaching and hydrothermal metallogenesis; (4) Five mineralization ages, namely 120-110 Ma, 84-74 Ma, 75- 65 Ma, 48-39 Ma and 30-24 Ma. ‰