Molybdenite Re-Os and zircon U-Pb dating of the Mesozoic Xingjiashan Mo-W deposit in the Jiaodong Peninsular, Eastern China

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The Xingjiashan deposit, located in the Jiaodong Peninsular in eastern China, is a typical skarn-type Mo-W deposit with an average Mo grade of 0.12 wt.% and W_2O_3 grade of 0.24 wt.%. The deposit is the only Mo-W one in the famous Jiaodong gold province, and temporally and spatially associated with intermediate to fine-grained Xingfushan adamellite porphyry. Mo-W mineralization is present mainly as veins, lenses and layers that are hosted by skarn.

LA ICP-MS U–Pb zircon age determinations of Xingfushan adamellite porphyry yielded a crystallization age of 162.1±1.4 Ma. Rhenium and osmium isotopes in molybdenite from the Xingjiashan deposit are used to determine the age of mineralization. Rhenium concentrations in molybdenite samples are between 3.2 and 7.8 μg/g. Analysis of seven molybdenite samples yields an isochron age of 162.9±2.7 Ma (MSWD=0.32). The W-Mo mineralization is therefore considered to be genetically related to adamellite porphyry emplacement in the Mesozoic. A low Re content of molybdenite in the ores indicates that the metal source was a crustal system. From these geochronological data and previously presented regional geological relationships, we propose that adamellite porphyry emplacement and Mo-W mineralization in the Xingjiashan mine resulted from an early stage of the subduction of the Paleo-Pacific plate beneath the North China craton.

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Contamination by polycyclic aromatic hydrocarbons (PAHs) in Tianjin rivers, China

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Tianjin is one of the most important industrial areas in northern China, and suffers from severe contamination of PAHs. Many rivers are located in the northeastern and south-western area of Tianjin city. Coal combustion, vehicle emission, coking industry, and biomass burning are the major contributors to PAHs pollution in the area. To understand the contamination status and behavior of PAHs in the river system, 72 water samples were collected from 12 major rivers in January 2008, and the levels of 16 priority PAHs in water and suspended particulate matter (SPM) samples were examined.

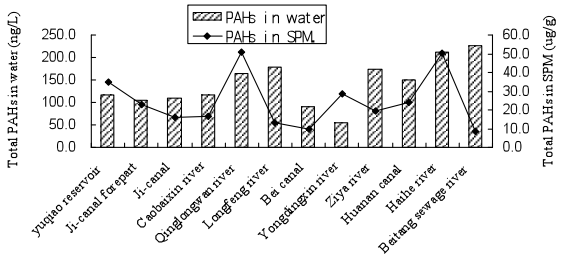

Figure 1: The contents of PAHs in water and SPM samples

The total concentrations of 16 PAHs varied from 25.1 to 131.1 ng/L in water, and from 0.13 to 213.8μg/g dry weight in SPM respectively (Fig.1). Two- to three-ring PAHs predominated in water samples of the study areas, and Nap was the most dominant. PAHs contents in SPM of the northern rivers were less polluted than those of the southern rivers. Predomination of low molecular weight PAHs suggests the relatively recent local source and coal combustion source of PAHs in the study area.

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