

Supplemental Material S1

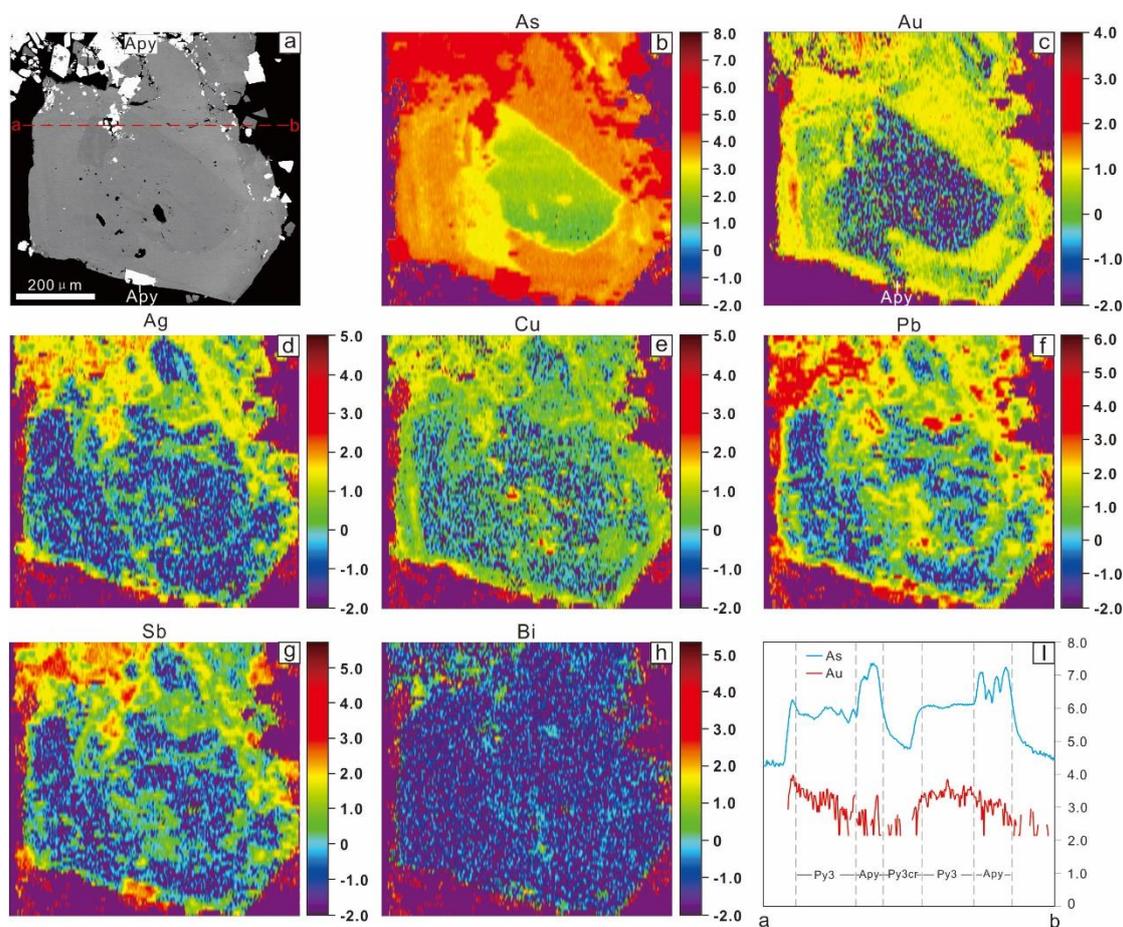


Figure S1. LA-ICP-MS elemental map results of the other pyrite grain with core (Py3cr) and rim (Py3). (a) BSE image of the pyrite. (b-h). Mapping results of different elements; scale are in ppm (base-10 logarithm). i. Ablated line (a-b; in Fig. a) showing the variation of signal intensities of selective trace elements, with scale in cps (base-10 logarithm).

The pyrite grain also contains a core depleted in As and Au and a rim distinctly enriched in them (Figs S1b and c). Contents of Au and As decrease gradually from rim to core, while, the boundary between Py3 and Py3cr is also relatively irregular. It also shows a positive co-variation of signal intensities of As and Au between Py3 and Py3cr and the content of Au in arsenopyrite is relatively lower than the rim of Py3 (Fig. S1i). Ag,

Cu, Pb, Sb and Bi are concentrated in the area of arsenopyrites that distribute along microfractures of pyrite grain (Figs. S1d-S1h). In contrast to the previous one, these elements do not show obvious enrichment in the core part due to relative lacking of polysulfide inclusions.