Supplementary Figures AM-13-050

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Incorporation of Zn in the destabilization products of muscovite at 1175 °C under disequilibrium conditions, and implications for heavy metal sequestration

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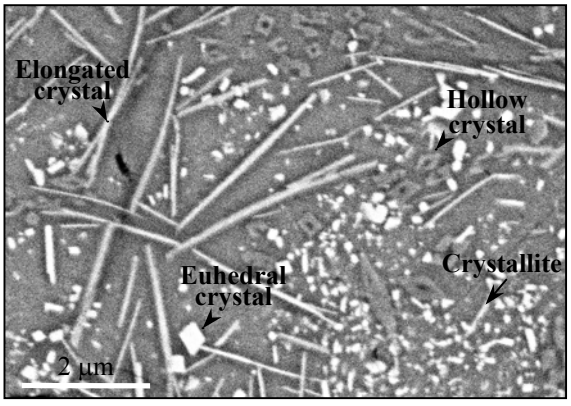
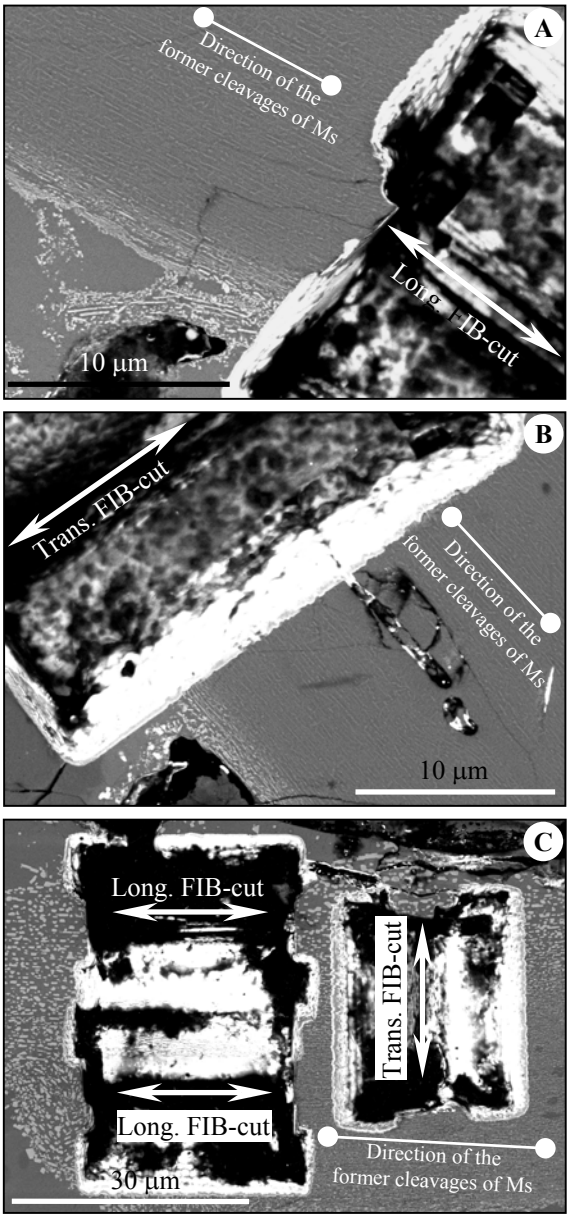


Supplemental Figure A1.

SUPPLEMENTAL FIGURE 1. BSE-SEM image showing a basal section of muscovite heated for 40 min at 1175 °C. The texture in the core displays complex heterogeneous mixtures of oxides with small crystallites ca. 50 to 300 nm, elongated crystals (50–100 nm × 2–3 µm) and hollow, euhedral crystals (0.5 × 1 µm).



Supplemental Figure A2.

►**SUPPLEMENTAL FIGURE 2.** BSE-SEM images showing craters of the FIB cuts extracted out of lateral sections of heated muscovite, parallel (labeled Long.) and perpendicular (labeled Trans.) to the direction of the former muscovite (Ms) cleavages in two crystals selected from the optical and SEM observations (see FIB cut craters on Figs. 2a and 2e). (a) For Ms heated during 10 min, the longitudinal FIB cut was carried out in the core region of the pseudomorph (Ps) but close to the rim (ca. 5 micrometers from the edge of the Ps) and (b) the transversal foil was cut across the rim and several micrometers into the core. (c) For the 68 h duration, a first longitudinal FIB cut was realized in an homogenous region representative of most Ps. A second longitudinal cut and a transversal cut were made in a large Ps to observe the transition between the coarse-grained rim and the finer-grained core.

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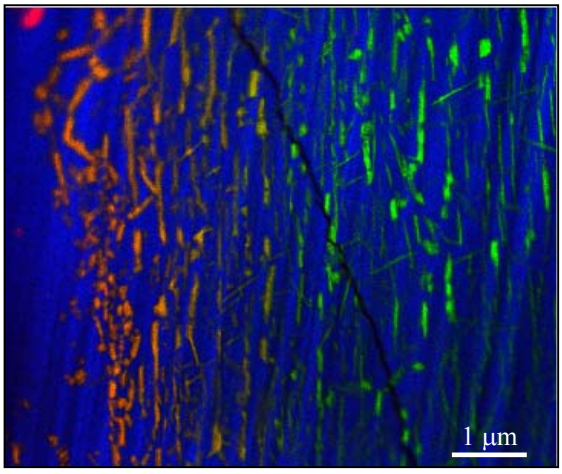
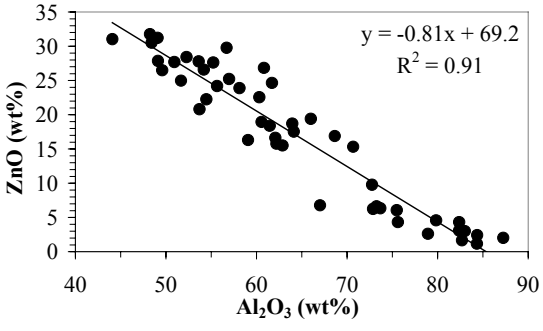


Supplemental Figure A3.

SUPPLEMENTAL FIGURE 3. Color-coded (R-G-B = Zn-Al-Si) version of STEM-EDS elemental map in Figure 8a (transversal cut through the thin Zn-rich rim).



Supplemental Figure A4.

SUPPLEMENTAL FIGURE 4. ZnO vs. Al_2O_3 contents (in wt%) of Al-Zn oxides in muscovite pseudomorphs after10 min at 1175 °C (TEM-EDS analyses).

Supplementary Figures continued AM-13-050