

Supplementary Information

Beneficiation of Low-Grade Rare Earth Ore from Khalzan Burgetei Deposit (Mongolia) by Magnetic Separation

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1. SEM-EDS analysis of thin-sections of ore sample

Figure S1 shows the SEM-EDS analysis of REE ore thin-section. Apart from bastnaesite and pyrochlore, synchysite ($\text{Ca}(\text{REE})(\text{CO}_3)_2\text{F}$) and columbite-(Fe) were also found to be REE-bearing minerals (Figure S1). Zircon has been reported to incorporate REEs into its structure [19,26,27], but REE signals were not detected on zircon (Figure S1). The grain sizes of REE-carbonates (e.g. bastnaesite and synchysite) and pyrochlore varied from 10 to 154 μm and 10 to 243 μm , respectively (Figures 4 and S1).

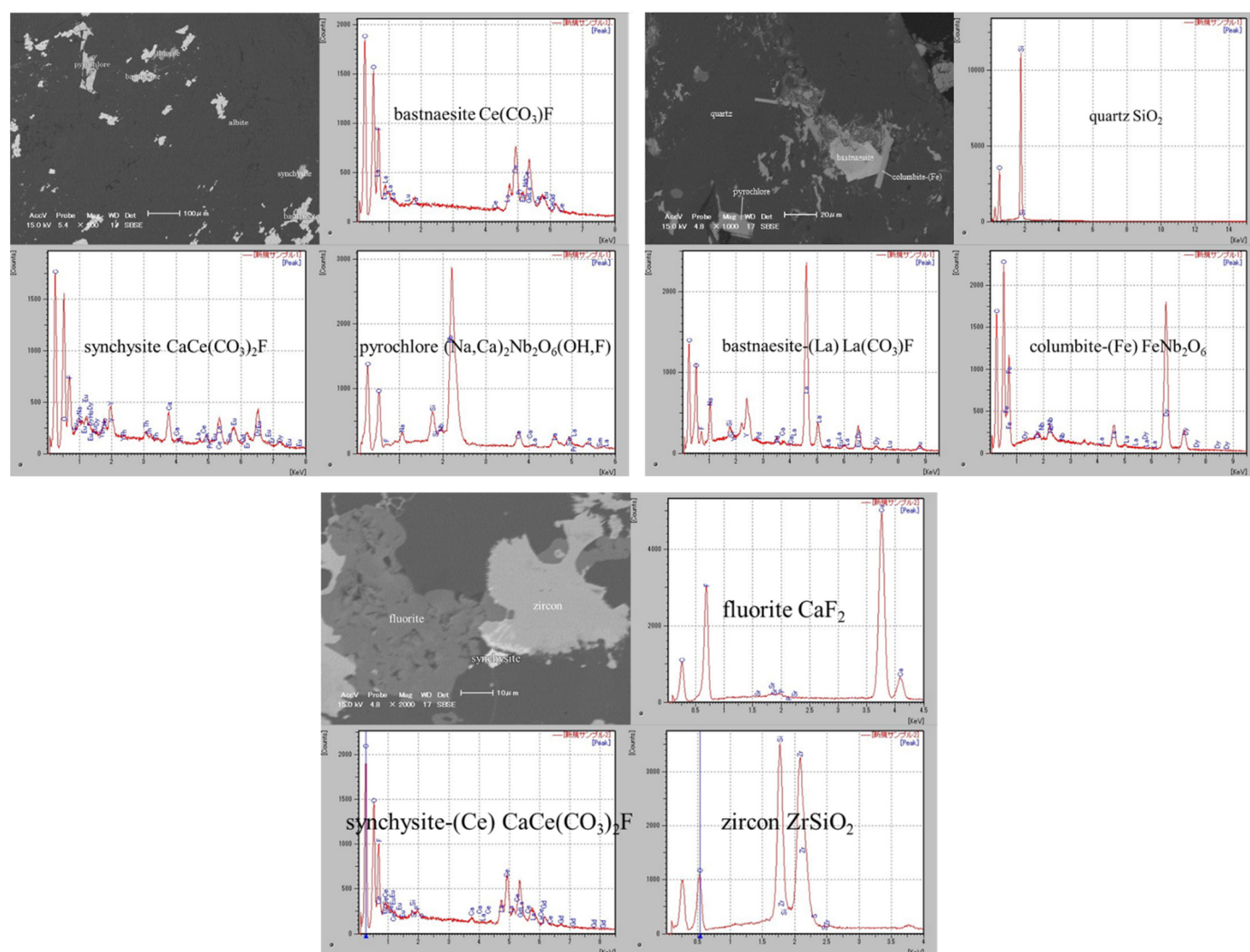


Figure S1. Back-scattered electron (BSE) images and EDS point analyses of REE ore thin-section.