Supporting Information

Competitive Crystallization, In-Situ Separation and Solidification Mechanism of Cr-Spinel Crystal from Cr-bearing Slag

Yu Li, Jintao Gao*, Xi Lan, Guoliang Feng, Yanling Zhang and Zhancheng Guo*

State Key Laboratory of Advanced Metallurgy, University of Science and Technology Beijing, 100083 Beijing, P.R. China.

Corresponding author: *Jintao Gao, *Zhancheng Guo

E-mail: Jintao Gao: jintaogao@ustb.edu.cn

Zhancheng Guo: zcguo@ustb.edu.cn

Tel.: +86 010 82377750

Fax.: +86 010 82375042

The recovery ratio of Cr in the Cr-spinel crystals was calculated via **Eq. (1)**.

$$R_{Cr} = \frac{m_{Cr} \times \omega_{Cr}}{m_{Cr} \times \omega_{Cr} + m_s \times \omega_s} \times 100\% \qquad (1)$$

where, R_{Cr} is the recovery ratio of Cr in Cr-spinel crystals, ω_{Cr} and ω_s are the mass fractions of Cr_2O_3 in Cr-spinel crystals and slag phase, m_{Cr} and m_s are the masses of them, respectively.

The recovery ratio and the mass fraction of Cr in Cr-spinel crystals compared to the slag phase separated from Cr-bearing slag with various FeO and MnO content is shown in **Fig. S1**.

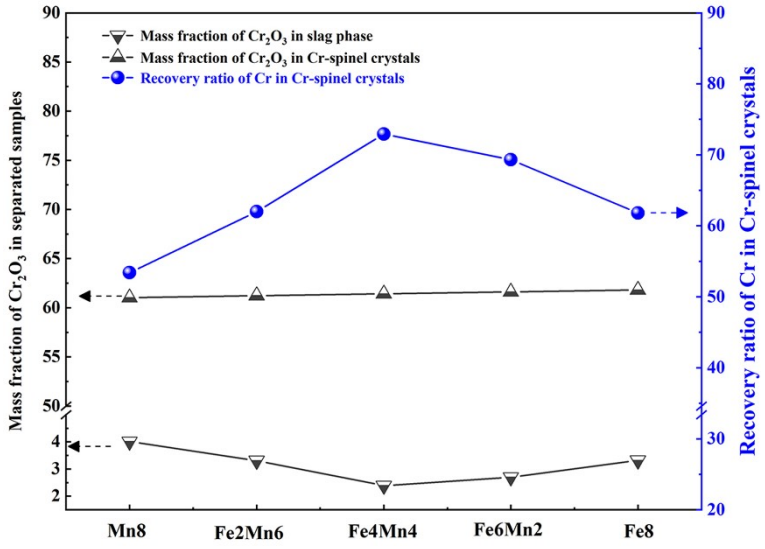

Fig. S1 Recovery ratio and mass fraction of Cr in Cr-spinel crystals compared to slag phase separated from Cr-bearing slag.