

Supplementary Information

Ligand-Induced Tetrad Effect in Coordination Leaching of Ion-Adsorption Rare Earth Ores: Enhanced Recovery of High-Value Low-Lanthanum Rare Earth Concentrates

Kui Zou¹, Hongbo Zhao^{1*}

¹ School of Minerals Processing & Bioengineering, Central South University,
Changsha, Hunan, China

*Corresponding Author:

Prof. Hongbo Zhao; Tel: +86-151-16335985

Email: zhbalexander@csu.edu.cn ; alexanderesu@126.com

Table S1 Rare earth element grades of raw ion adsorption rare earth ores.

Composition	La	Ce	Pr*	Nd*	Sm	Eu	Gd*	Tb*
Grade (%)	0.265	0.150	0.056	0.224	0.039	0.004	0.035	0.006
Composition	Dy*	Ho*	Er*	Tm	Yb	Lu*	Y	Total rare earth
Grade (%)	0.026	0.005	0.009	0.001	0.006	0.001	0.107	0.934

* indicates high-value rare earth elements for industrial use

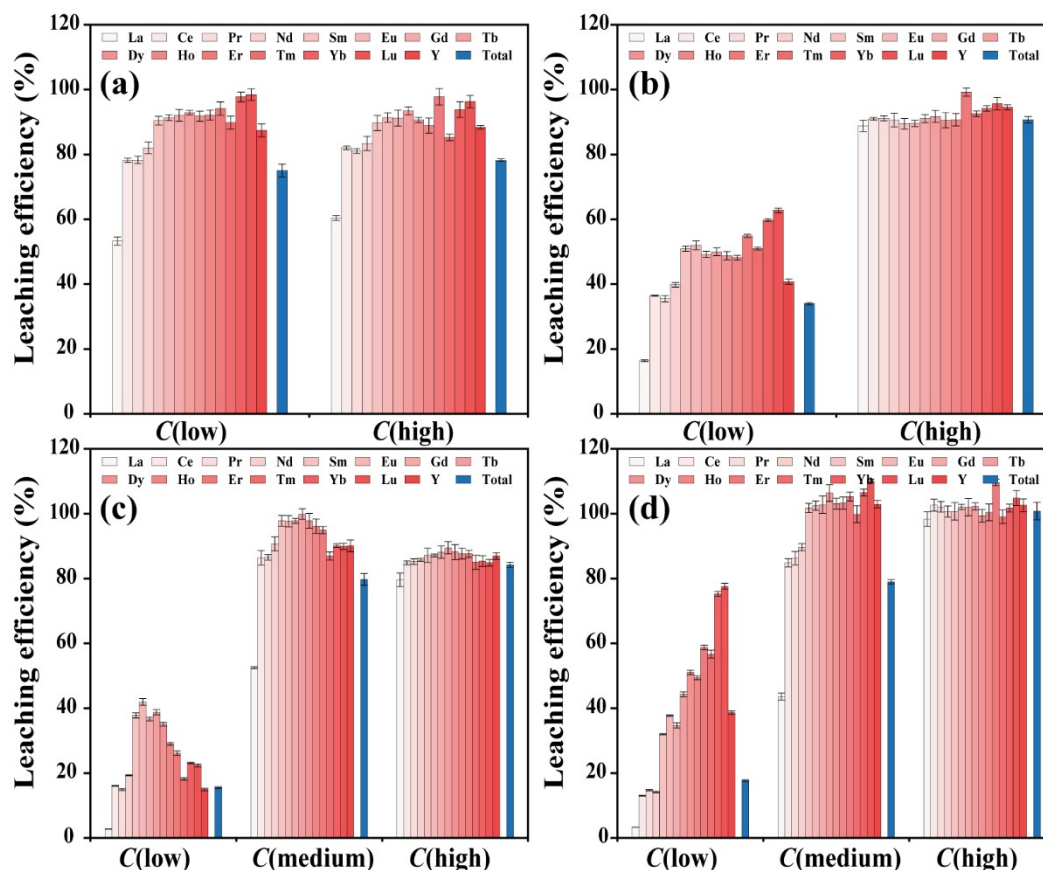


Figure S1. Bottle leaching results of single rare earth elements from ion- adsorption rare earth ores. (a) Dihydroxypropanoic acid leaching (0.1%, 3.0%); (b) potassium D-erythronate leaching (0.1%, 3.0%); (c) gluconic acid sodium salt leaching (0.5%, 0.8%, 1.5%); and (d) sodium citrate tribasic hydrate leaching (0.1%, 0.15%, 0.2%). Ore dosage: 10 g, liquid-solid ratio: 10:1, temperature: 25°C, speed: 200 rpm.