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# Synergy Effects of Combined Red Muds as Oxygen Carriers for Chemical Looping Combustion of Methane

Guixian Deng[a,b], Kongzhai Li[b,c,*], Zhenhua Gu[b], Xing Zhu[b], Yonggang Wei[b], Xianming Cheng[b], Hua Wang[b]

[a] Faculty of Chemical Engineering, Kunming University of Science and Technology, Kunming 650500, China

[b] State Key Laboratory of Complex Nonferrous Metal Resources Clean Utilization, Kunming University of Science and Technology, Kunming 650093, China

[c] Faculty of Metallurgical and Energy Engineering, Kunming University of Science and Technology, Kunming 650093, China

***Corresponding author:** Kongzhai Li (kongzhai.li@aliyun.com; kongzhai.li@foxmail.com)

**Abstract**

Iron-containing natural ores or solid wastes (e.g., red mud) are considered as ideal candidate as oxygen carrier for large-scale chemical looping combustion technology due to their high content of $Fe_2O_3$ and low cost. However, these oxygen carriers usually show low activity for fuel conversion because of the special structure and components. In the present study, two types of red mud (V-RM with rich $Fe_2O_3$ and W-RM with rich inert and alkaline components) were combined to modify the structure and the distribution of different components in the red mud oxygen carrier