Supporting information for

Optimize spinel metal oxide-based low-temperature thermochemical cycles for water splitting and CO\textsubscript{2} reduction

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Figure S1. Fe$_3$O$_4$/Li$_2$CO$_3$, Fe$_3$O$_4$/Na$_2$CO$_3$ and Fe$_3$O$_4$/K$_2$CO$_3$ were first subject to a temperature ramp-and-hold to 850°C in Ar, and were then cooled to 200°C. A second temperature ramp-and-hold to 850°C was conducted in D$_2$O/Ar (5%/95%), with the top, middle and bottom traces corresponding to the starting materials of Fe$_3$O$_4$/Li$_2$CO$_3$, Fe$_3$O$_4$/Na$_2$CO$_3$ and Fe$_3$O$_4$/K$_2$CO$_3$, respectively.