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## **Supplementary Information:**

## Thermochemical Energy Storage in Barium Carbonate Enhanced by Iron (III) Oxide

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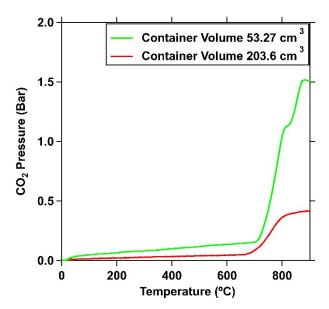
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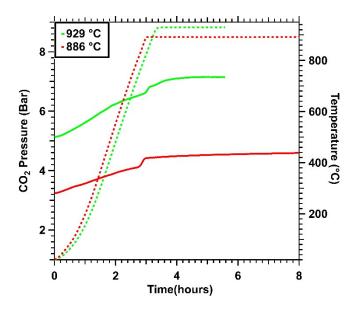
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**Figure S1:**  $^{\sim}$  1 g of BaCO<sub>3</sub>-Fe<sub>2</sub>O<sub>3</sub> heated from room temperature to 900 °C.  $\Delta T/\Delta t = 10$  °C min<sup>-1</sup>) using a sealed volume in a Sieverts apparatus at  $p_{\text{initial}}(\text{CO}_2) = 10^{-2}$  bar: using a volume of either 53.27 cm<sup>3</sup> (green curve) or 203.6 cm<sup>3</sup> (red curve), which influences the CO<sub>2</sub> pressure achieved during decomposition of the BaCO<sub>3</sub>-Fe<sub>2</sub>O<sub>3</sub> RCC.



**Figure S2:**  $^{\circ}$  1 g of BaCO<sub>3</sub>-Fe<sub>2</sub>O<sub>3</sub> heated from room temperature to 900 °C.  $\Delta T/\Delta t$  = 10 °C min<sup>-1</sup>) in a sealed volume (53.27 cm<sup>3</sup>) using Sieverts apparatus. Dashed curve represents the temperature and solid curve represents the pressure.