**Supporting Information for**

**Room temperature Synthesis of SrCO₃ Hierarchical Architectures by a Surfactant-Free Aqueous Solution Route**

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**Supporting Information, Figure S1.** SEM images of wheel-like SrCO₃ hierarchical architectures. a) Low-magnification SEM image of the SrCO₃ architecture. b-d) High-magnification SEM images from area b, c and d marked in a, respectively.
Supporting Information, Figure S2. (a) XRD pattern and (b) EDS spectrum of the as-synthesized SrCO$_3$ hierarchical architectures with an OH$^-$ concentration of 10 mol·L$^{-1}$ (25 mL).

Supporting Information, Figure S3. (a) XRD pattern and (b) EDS spectrum of the as-synthesized SrCO$_3$ hierarchical architectures with a OH$^-$ concentration of 2 mol·L$^{-1}$ (25 mL).
Supporting Information, Figure S4. EDS spectra of the SrCO₃ products obtained at different reaction temperature while keeping other reaction conditions the same: (a) 40 °C and (c, db) 80 °C.

Supporting Information, Figure S5. (a) XRD pattern of the as-synthesized SrCrO₄ nanowire (JCPDS Card No. 15-0368, with lattice parameters of \( a = 7.081 \text{ Å} \), \( b = 7.388 \text{ Å} \), \( c = 6.771 \text{ Å} \), and \( \beta = 103.4^\circ \)), (b, c) SEM images and (d) EDS spectrum of the as-synthesized SrCrO₄ nanowire.
Supporting Information, Figure S6. (a, b) SEM images and (c) EDS spectrum of the as-synthesized SrCO₃ product synthesized by the direct reaction between aqueous SrCl₂ and Na₂CO₃ solutions.
Supporting Information, Figure S7. (a, b) SEM images and (c) EDS spectrum of the as-synthesized SrCO$_3$ product synthesized by using aqueous Na$_2$CO$_3$ solution instead of aqueous NaOH solution.
Supporting Information, Figure S8. (a, b) SEM images and (c) EDS spectrum of the as-synthesized SrCO$_3$ product synthesized by the direct reaction between SrCl$_2$ aqueous solution and NaOH aqueous solution.
Supporting Information, Figure S9. (a, b) SEM images and (c) EDS spectrum of the as-synthesized SrCO$_3$ product synthesized by the direct reaction between Sr(OH)$_2$ and Na$_2$CO$_3$ aqueous solution.

Supporting Information, Figure S10. XRD pattern of the products obtained by introducing 25 ml NaOH (0.4 mol·L$^{-1}$) into the reaction system of aqueous solutions of SrCl$_2$ and Na$_2$CrO$_4$. The products contain SrCrO$_4$ and SrCO$_3$, which clearly demonstrate the conversion of SrCrO$_4$ to SrCO$_3$. 