Supporting Information

New strategy for synthesizing yolk-shell V_2O_5 powders with low melting temperature for high performance Li-ion batteries

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This file includes:

- Morphologies of the V_2O_3-C precursor powders directly prepared by spray pyrolysis at various temperatures.
- XRD patterns of the the V_2O_3-C precursor powders, combusted V_2O_5 powders at different temperatures and dense structured V_2O_5 powders.
- Morphologies of the V_2O_5 powders obtained by combustion of V_2O_3-C composite powders at different temperatures.
- TG curves of the V_2O_5 powders combusted at 300 and 400 ^oC.
- TEM images of the dense structured V_2O_5 powders prepared by spray pyrolysis.

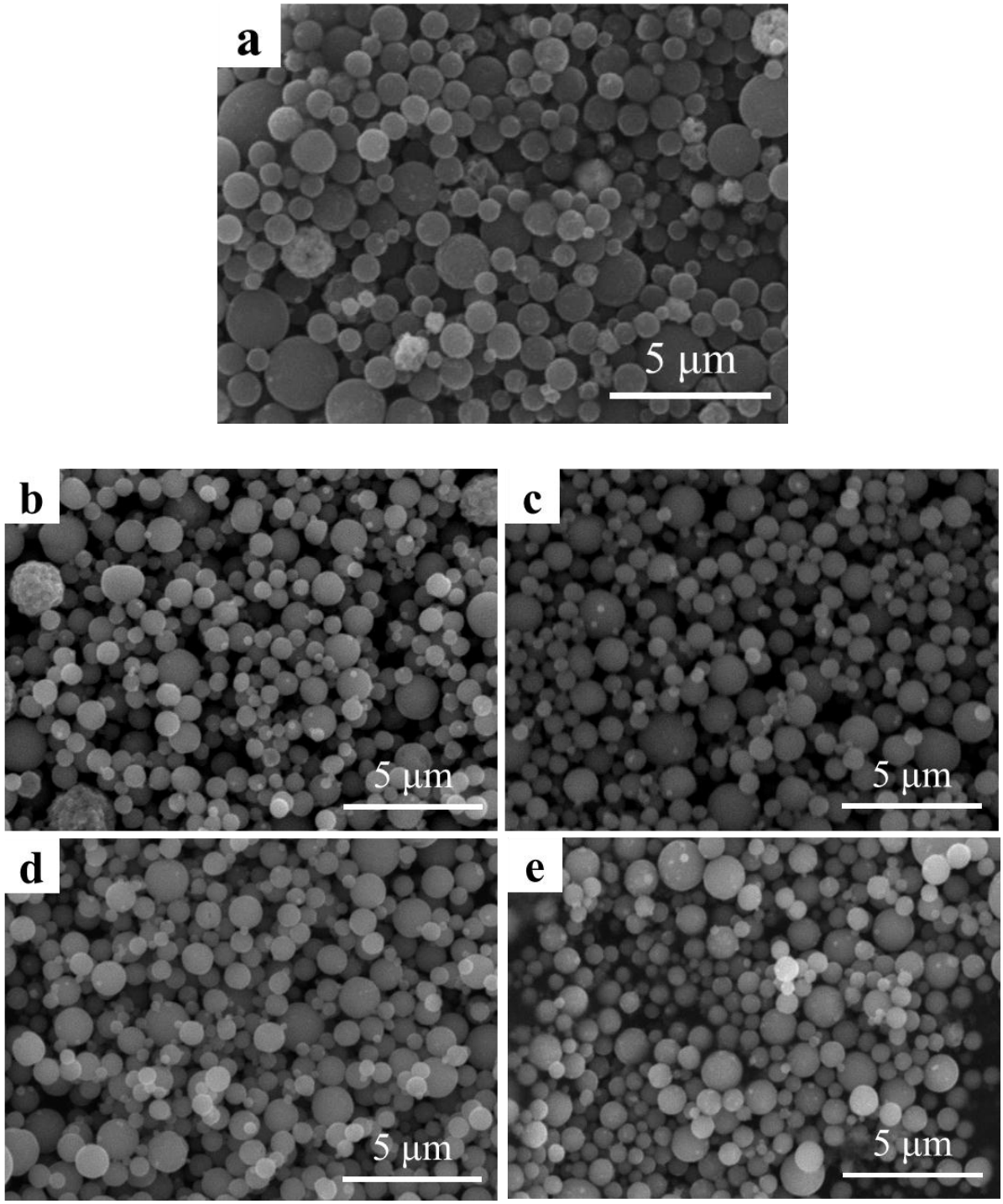

Fig. S1 Morphologies of the V_2O_3-C precursor powders directly prepared by spray pyrolysis at various temperatures; (a) 600 ^oC (b) 700 ^oC, (c) 800 ^oC, (d) 900 ^oC, and (e) 1000 ^oC.

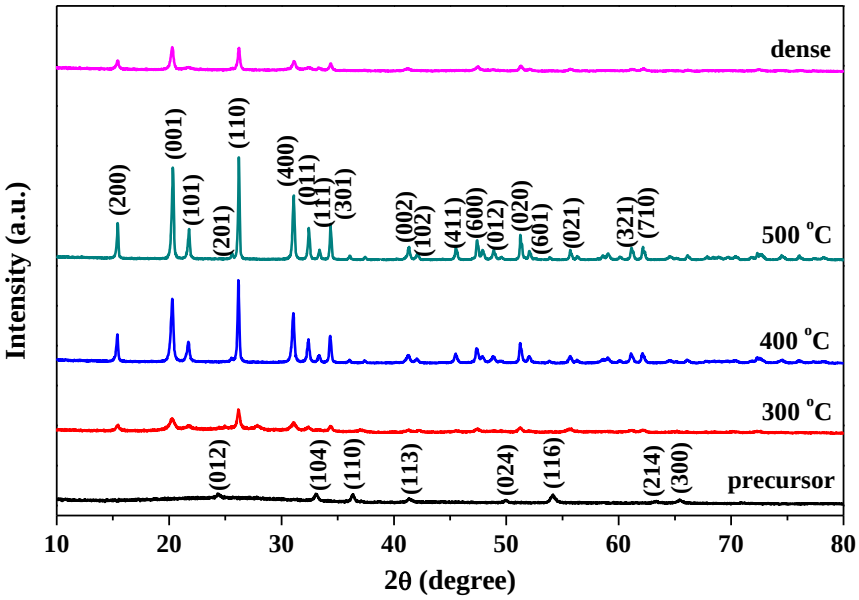

Fig. S2 XRD patterns of the the V_2O_3-C precursor powders, combusted V_2O_5 powders at different temperatures and dense structured V_2O_5 powders.

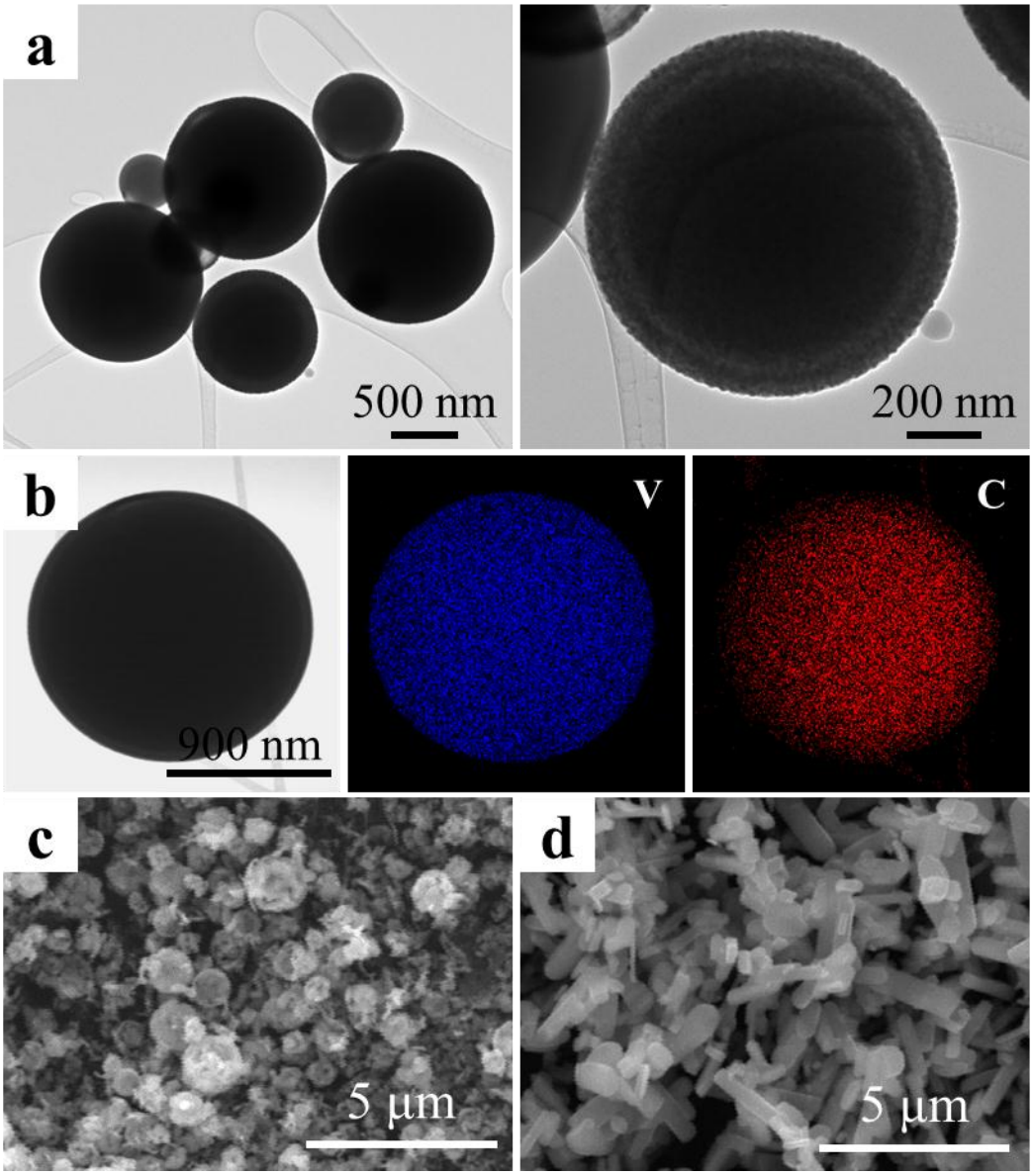

Fig. S3 Morphologies of the V_2O_5 powders obtained by combustion of V_2O_3-C composite powders at different temperatures; (a) TEM and (b) dot-mapping images of the powders combusted at 300 ^oC, (c) SEM image of the powders combusted at 500 ^oC, (d) SEM image of the powders combusted at 600 ^oC.

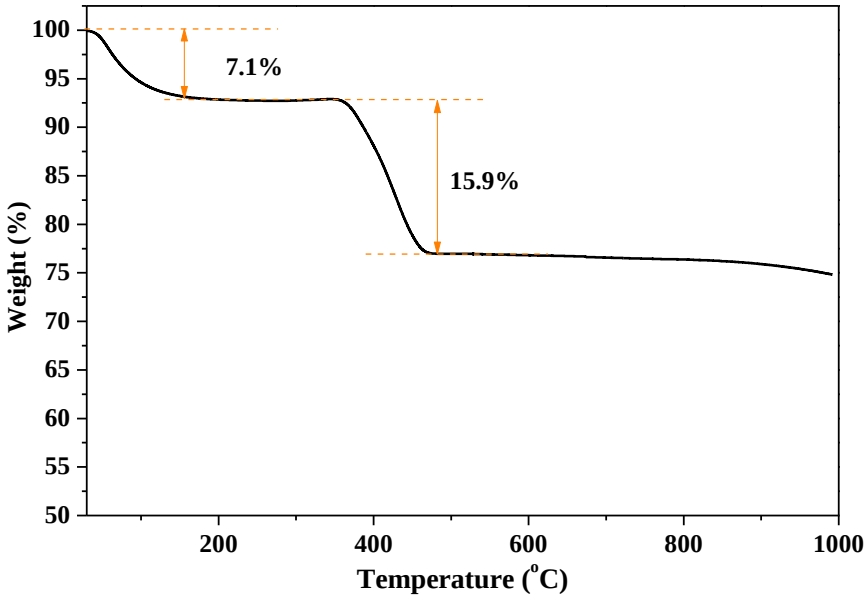

Fig. S4 TG curve of the V_2O_5-C composite powders combusted at 300 °C.

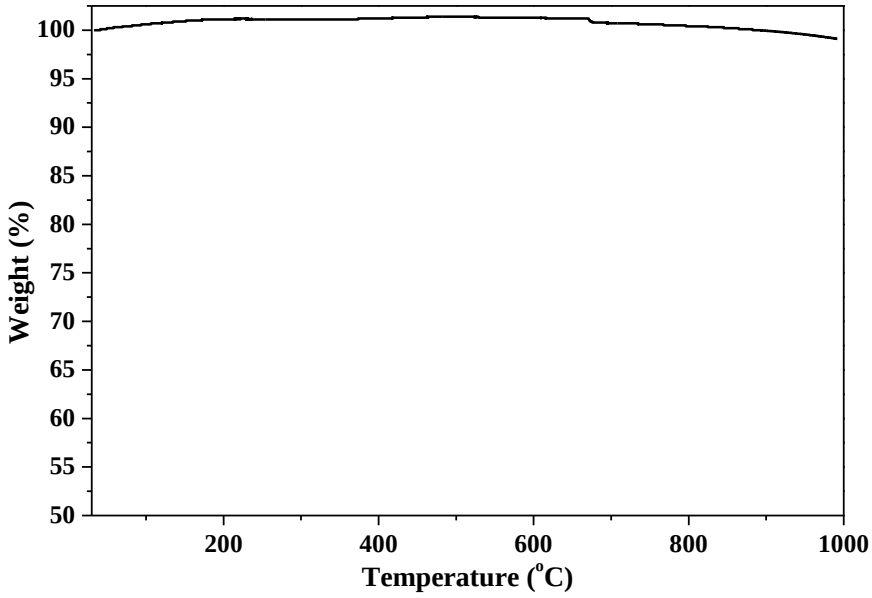

Fig. S5 TG curve of the yolk-shell V_2O_5 powders combusted at 400 °C.

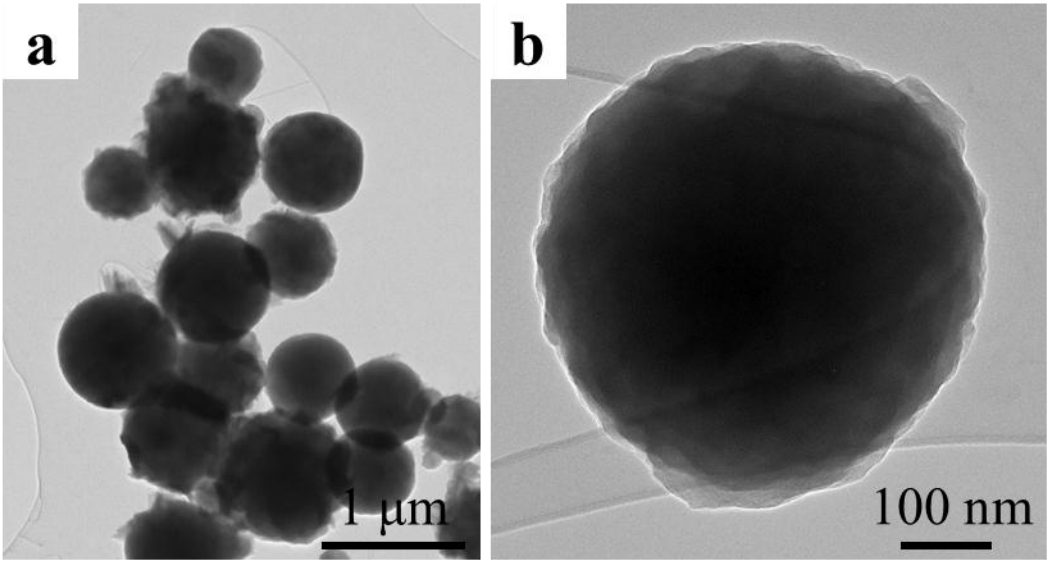

Fig. S6 (a) low-resolution TEM and (b) high-resolution TEM images of the dense structured V_2O_5 powders prepared by spray pyrolysis.