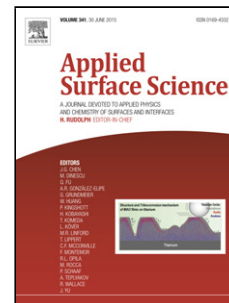


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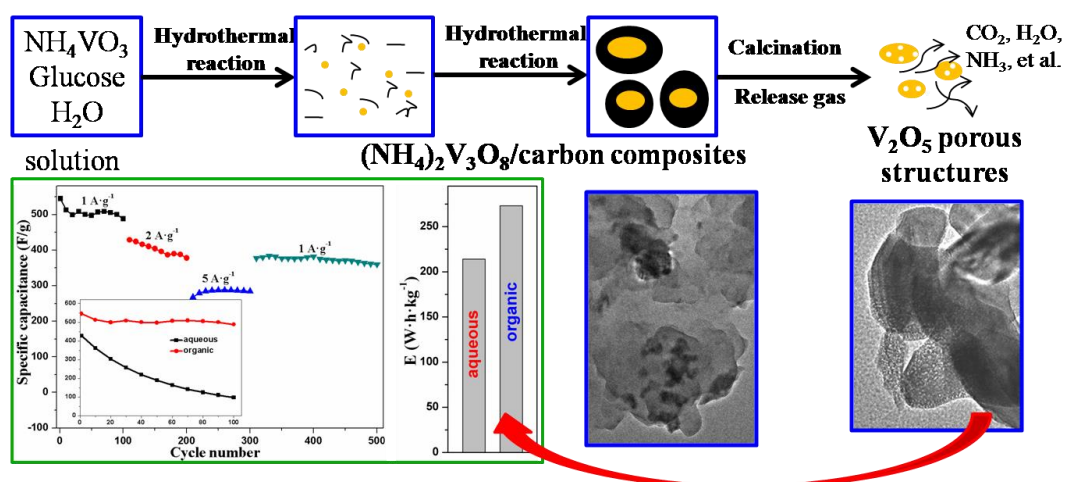
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Graphical Abstract

A facile one-step hydrothermal route was successfully developed to synthesize $(\text{NH}_4)_2\text{V}_3\text{O}_8$ /carbon core-shell composites using NH_4VO_3 and glucose as the starting materials for the first time, and then $(\text{NH}_4)_2\text{V}_3\text{O}_8$ /carbon composites were converted to porous V_2O_5 nanoparticles. The electrochemical properties of porous V_2O_5 nanoparticles are greatly improved using organic electrolyte.



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