

Supplementary Information

Metal-organic framework-combustion: a new, cost-effective and one-pot technique to a porous $\text{Co}_3\text{V}_2\text{O}_8$ microspheres anode for high energy Lithium-ion batteries†

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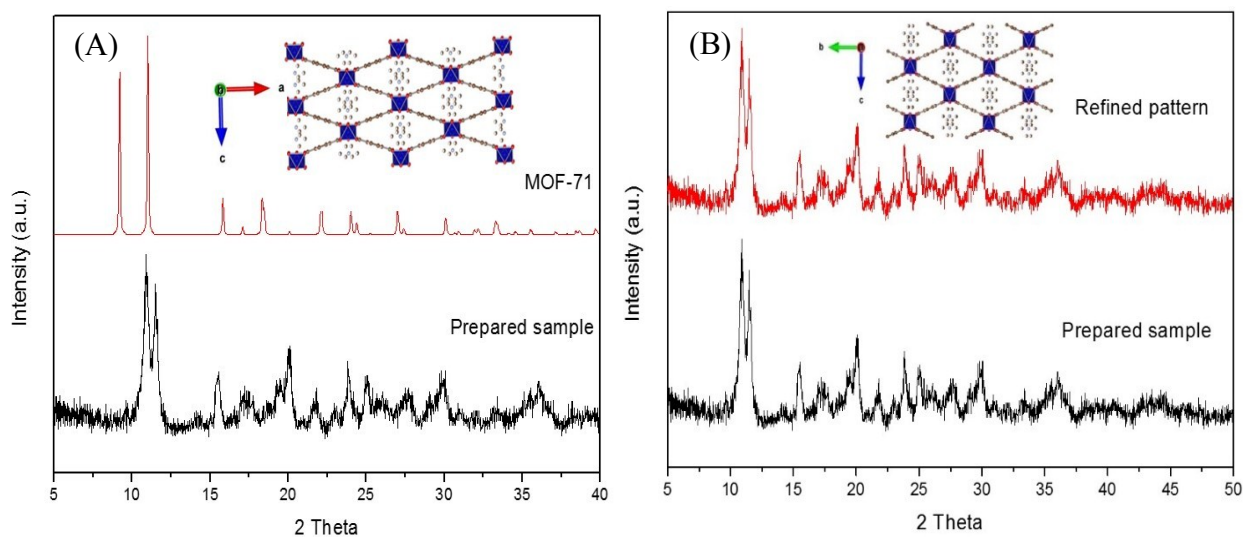


Fig. S1. (A) PXRD comparison between MOF-71 (simulated, top) and Co-V-MOF intermediate (below), (B) PXRD patterns before (below) and after refinement (top) for Co-V-MOF intermediate with respect to MOF-71 simulated pattern.

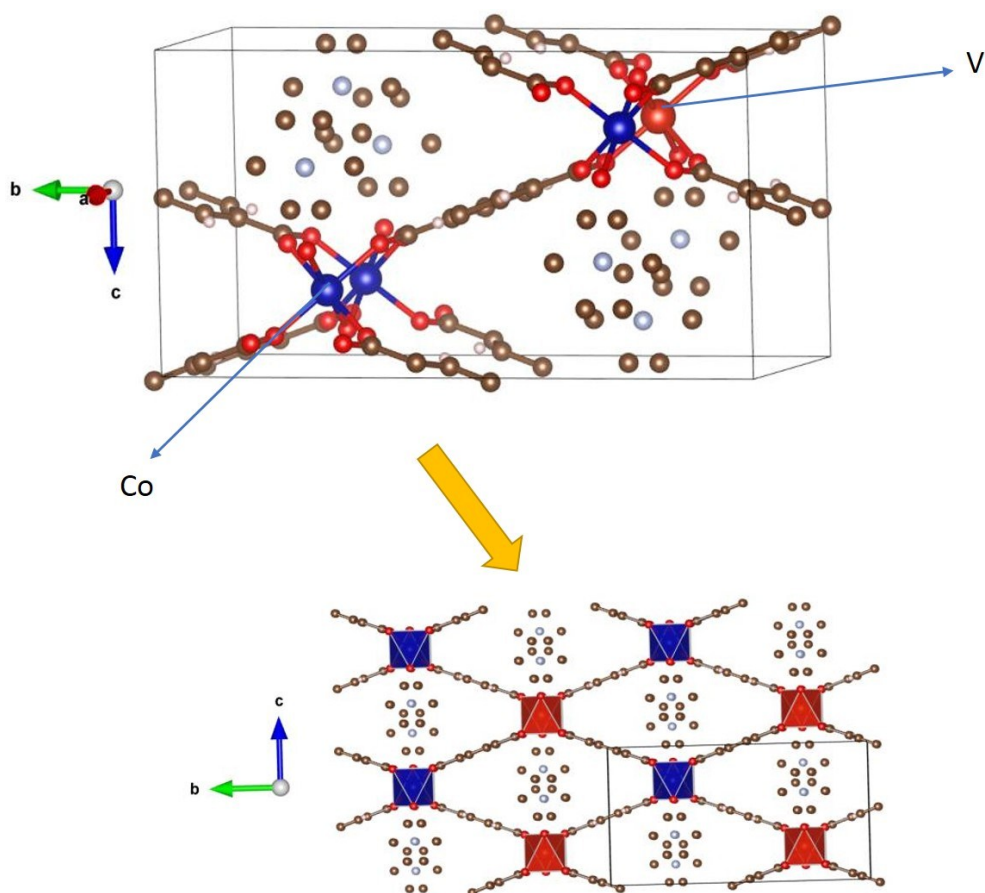


Fig. S2. Unit cell pattern of Co-V-MOF by replacing one Co atom with V atom in the Co-MOF-71 network (top), corresponding polyhedral 2D pattern (bottom).

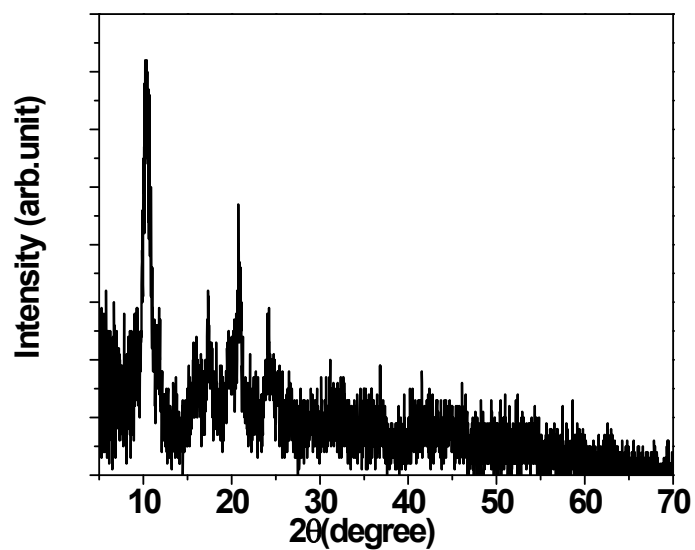


Fig. S3. PXRD pattern for Co-V-MOF derived after the solvothermal reaction at 180 °C for 12 h.

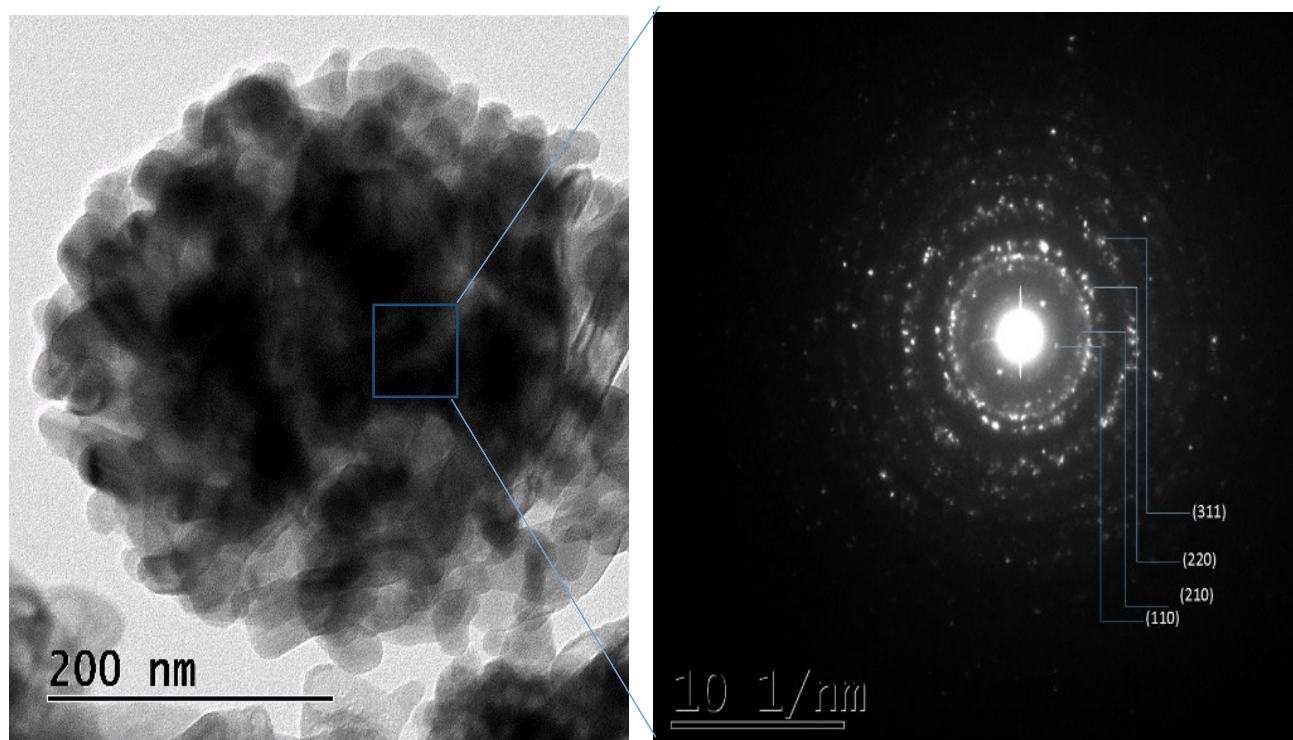


Fig. S4. High resolution TEM image (left) and corresponding SAED pattern (right).

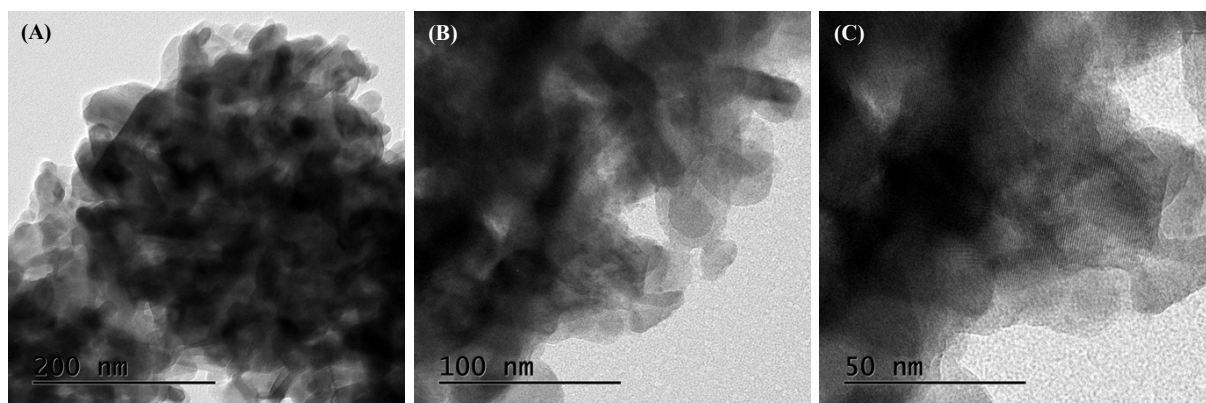


Fig. S5. FE-TEM images of $\text{Co}_3\text{V}_2\text{O}_8$ microspheres (A) low magnification, (B) and (C) high magnifications. Void spaces are clearly seen in the highly magnified images.

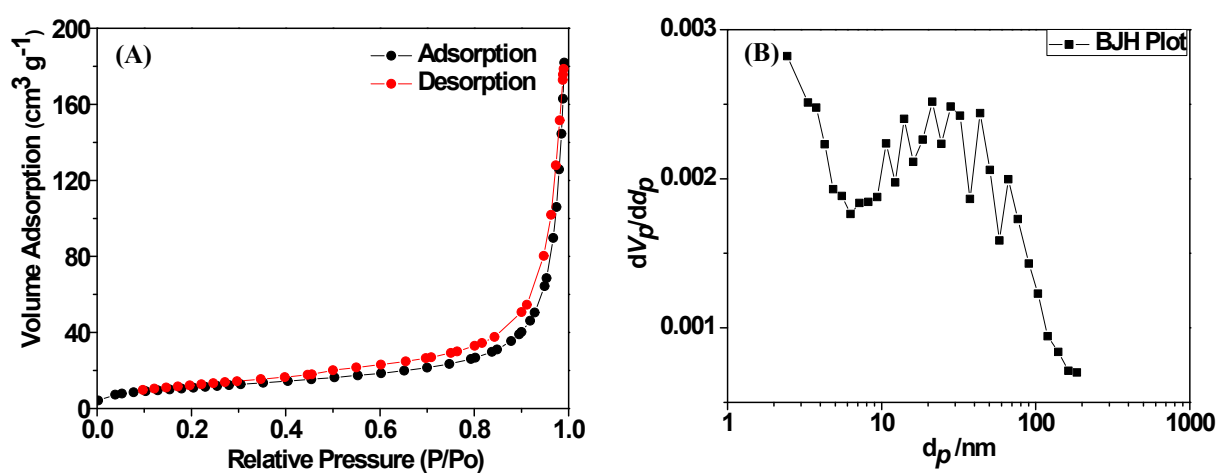


Fig. S6. BET surface area profile (A) Adsorption isotherm and (B) pore size distribution for the $\text{Co}_3\text{V}_2\text{O}_8$ microspheres prepared by the one-pot synthesis.

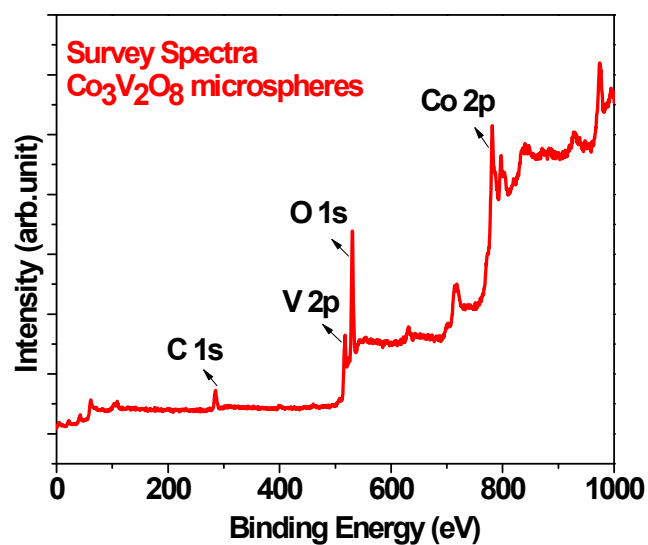


Fig. S7. XPS survey spectra for the CVO microspheres prepared in the present study.

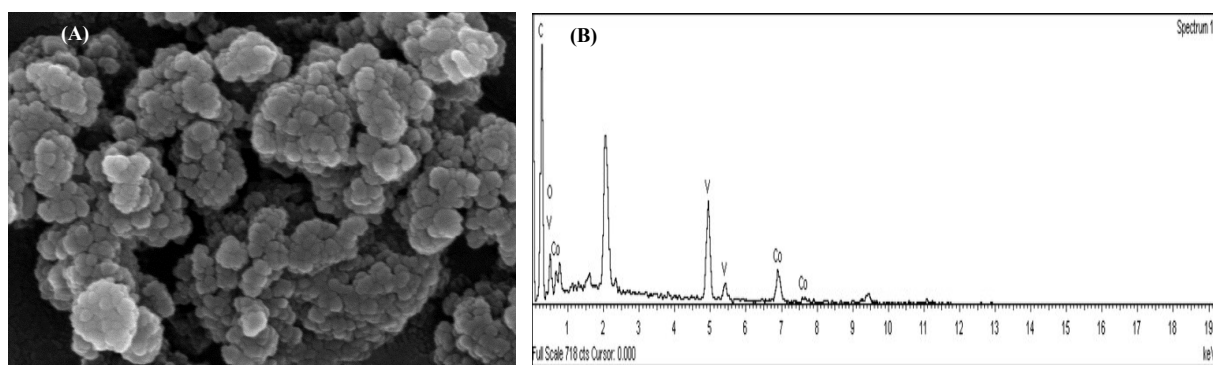


Fig. S8. Ex-situ (A) SEM image for CVO-microspheres after 100 discharge/charge cycles at 1 A g⁻¹ current density for LIBs; (B) corresponding EDS pattern.