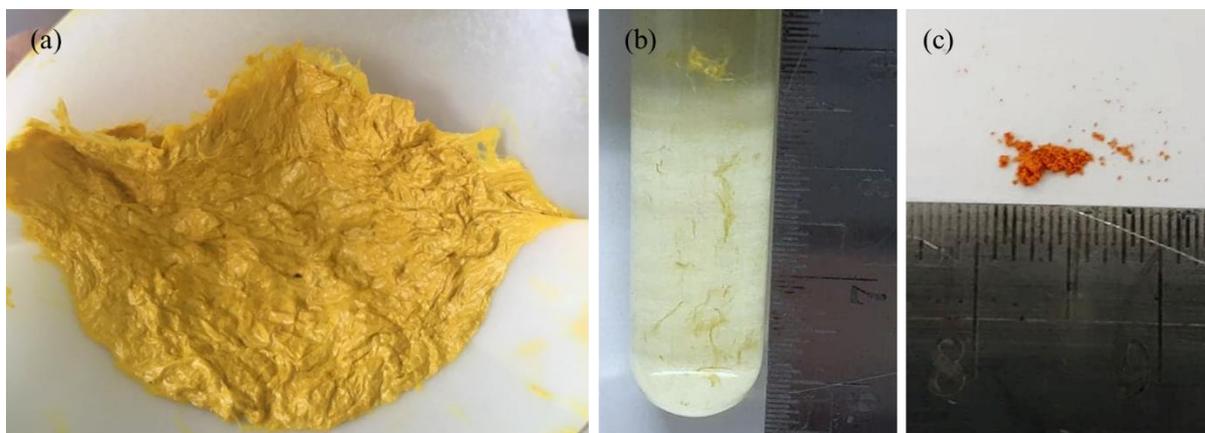


1 Supplementary Materials:



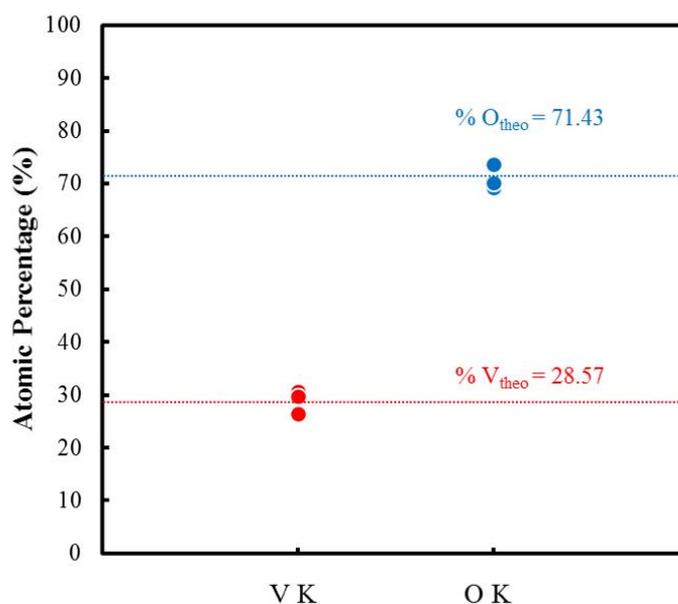
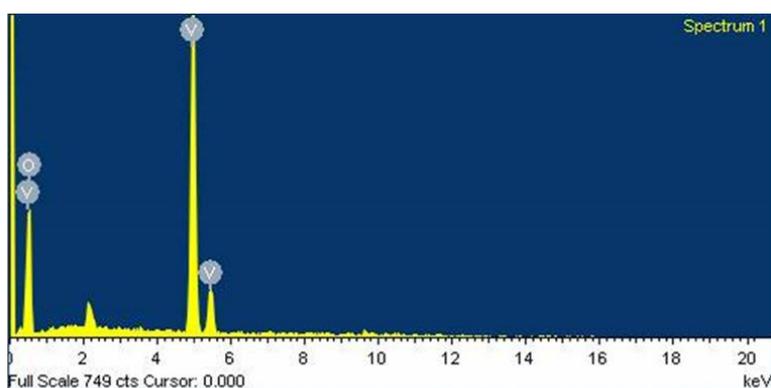
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Figure S1. (a) BCS-VONF on a 150 mm Ø Whatman filter paper No. 1; (b) BCS-VONF dispersed in water to separate the individual fibers and; (c) the V_2O_5 powder used for hydrothermal process to produce the centimeter-long V_2O_5 nanofibers.

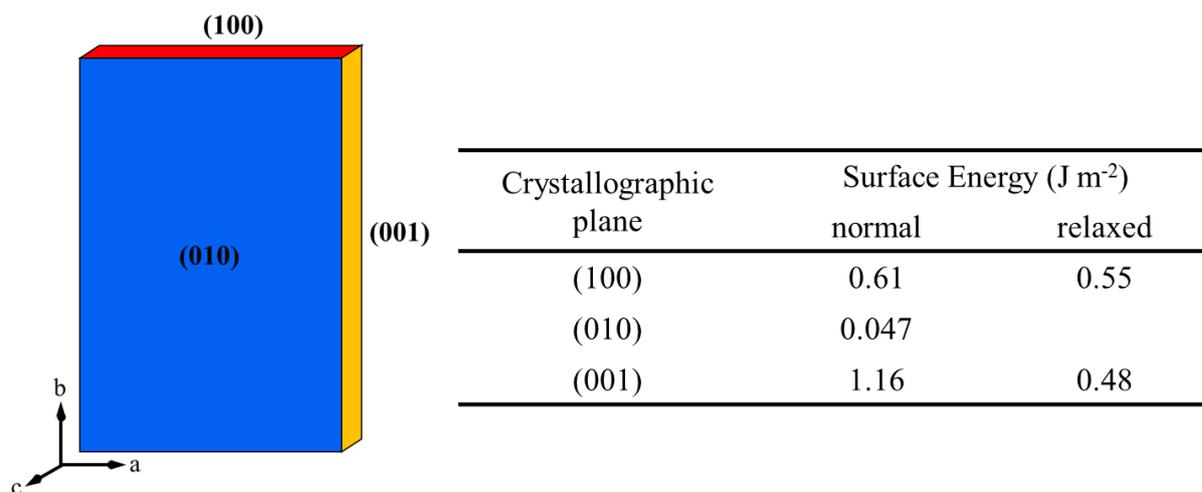


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Figure S2. EDS analysis (top) of BCS-VONF and the corresponding atomic percentages of V and O (bottom).



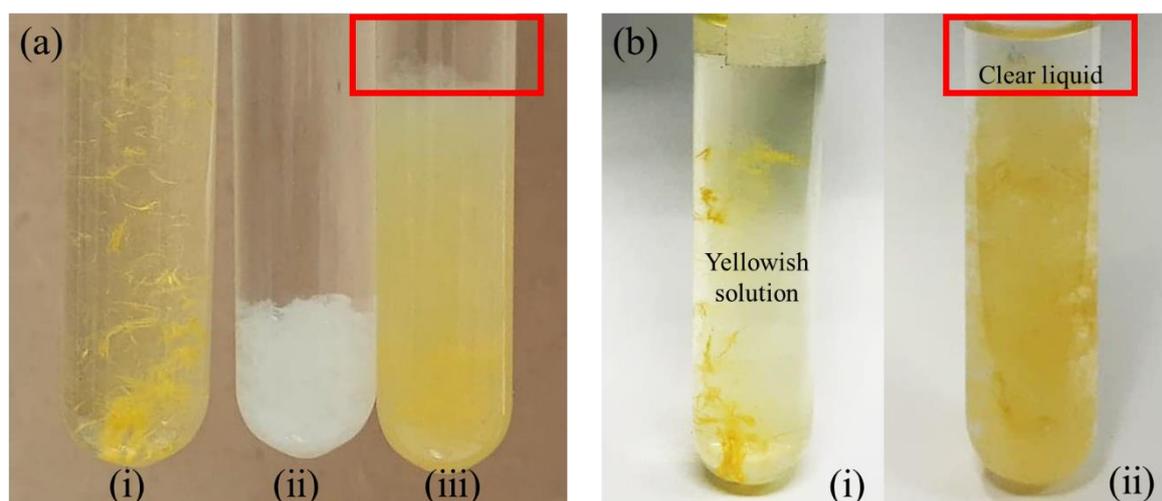
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Figure S3. Wulff constructed equilibrium shape of V₂O₅ crystal (**left**), indicating the areas occupied by the three low-index surfaces. Table of the surface energies of the three low-index surfaces (**right**) [33].



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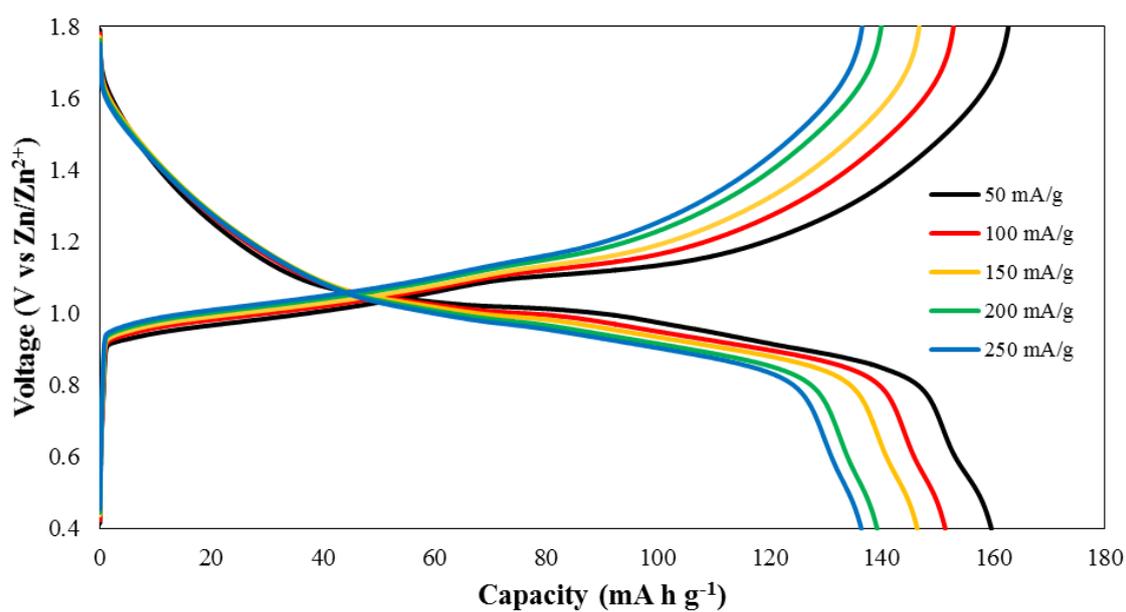
Figure S4. (a) BCS-VONF placed in (i) 3.0 M ZnSO₄ (ii) 3.0 M ZnCl₂ and (iii) 3.0 M Zn(OTf)₂ (b) BCS-VONF dispersed for two months in (i) 3.0 M ZnSO₄ and (ii) 3.0 M Zn(OTf)₂. The used ratio of BCS-VONF to electrolyte for all samples was similar to the ratio of the active material to the electrolyte used in the electrochemical test.

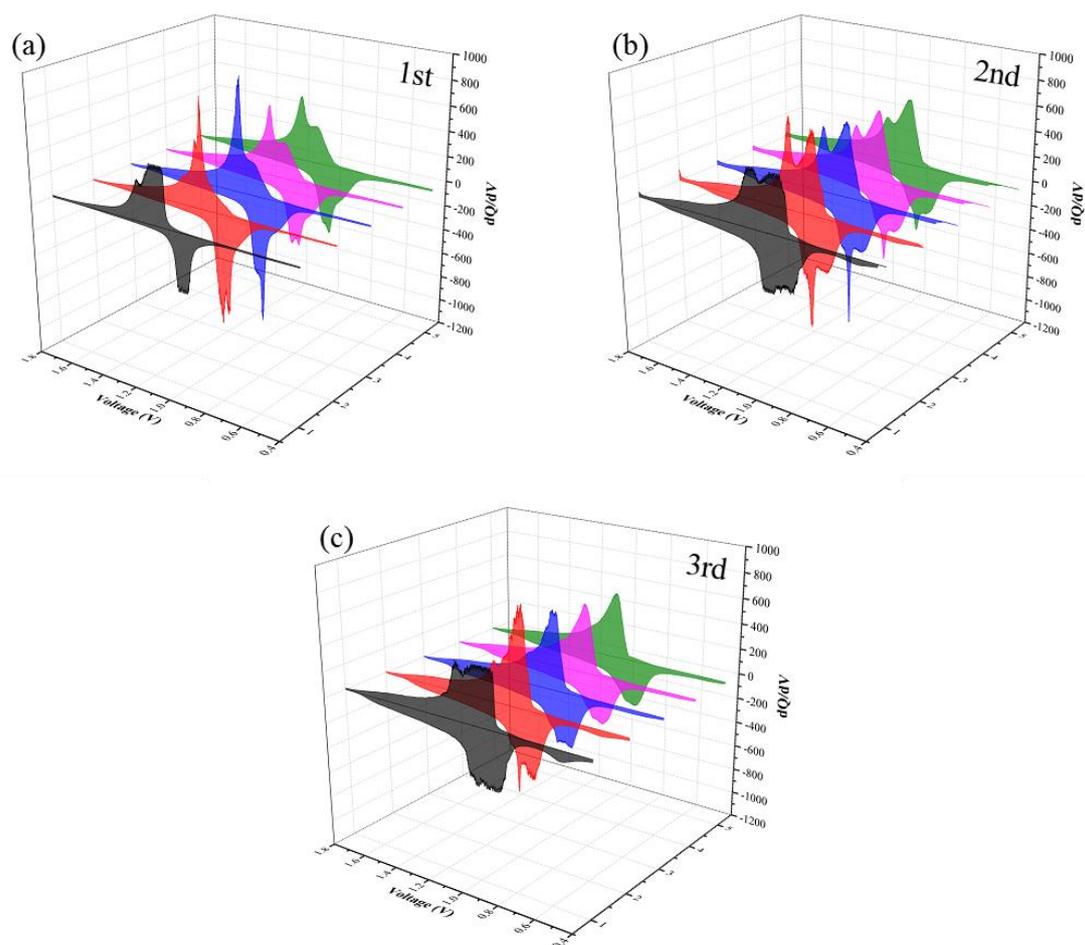
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20**Table S1.** Percentage capacity retention from the 2nd to the 3rd repetition of the rate capability test for various applied current density.

Current Density	Average Discharge Capacity (mAh/g)		% Capacity Retention
	Second	Third	
50 mA/g	161	169	104.97
100 mA/g	149	146	97.99
150 mA/g	144	134	93.06
200 mA/g	135	125	92.59
250 mA/g	135	123	91.11

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23**Figure S5.** Charge-discharge profile of BCS-VONF at different current densities.



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25 **Figure S6.** dQ/dV vs V graph of BCS-VONF at different repetitions: first (a) second (b) and third (c)
26 of rate capability test. The black, red, blue, magenta and olive colors correspond to the different
27 applied current densities i.e. 50, 100, 150, 200 and 250 mA g⁻¹, respectively.