Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

Design of Vanadium Oxide Core-Shell Nanoplatelets for Lithium Ion Storage

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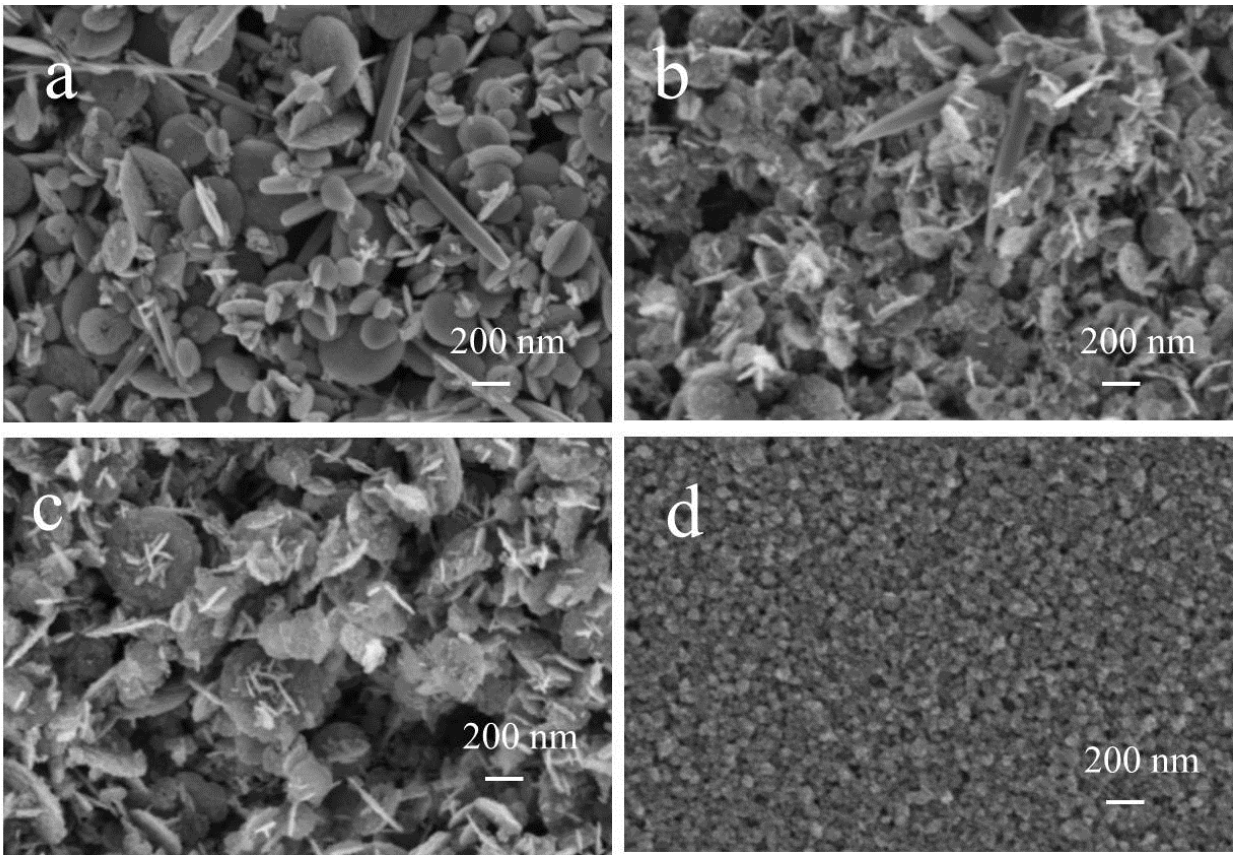

Figure S1. SEM images of the samples produced with different amounts of octylamine a) 0; b) 0.5 mmol; c) 1 mmol; d) 6 mmol. All other parameters were kept constant.

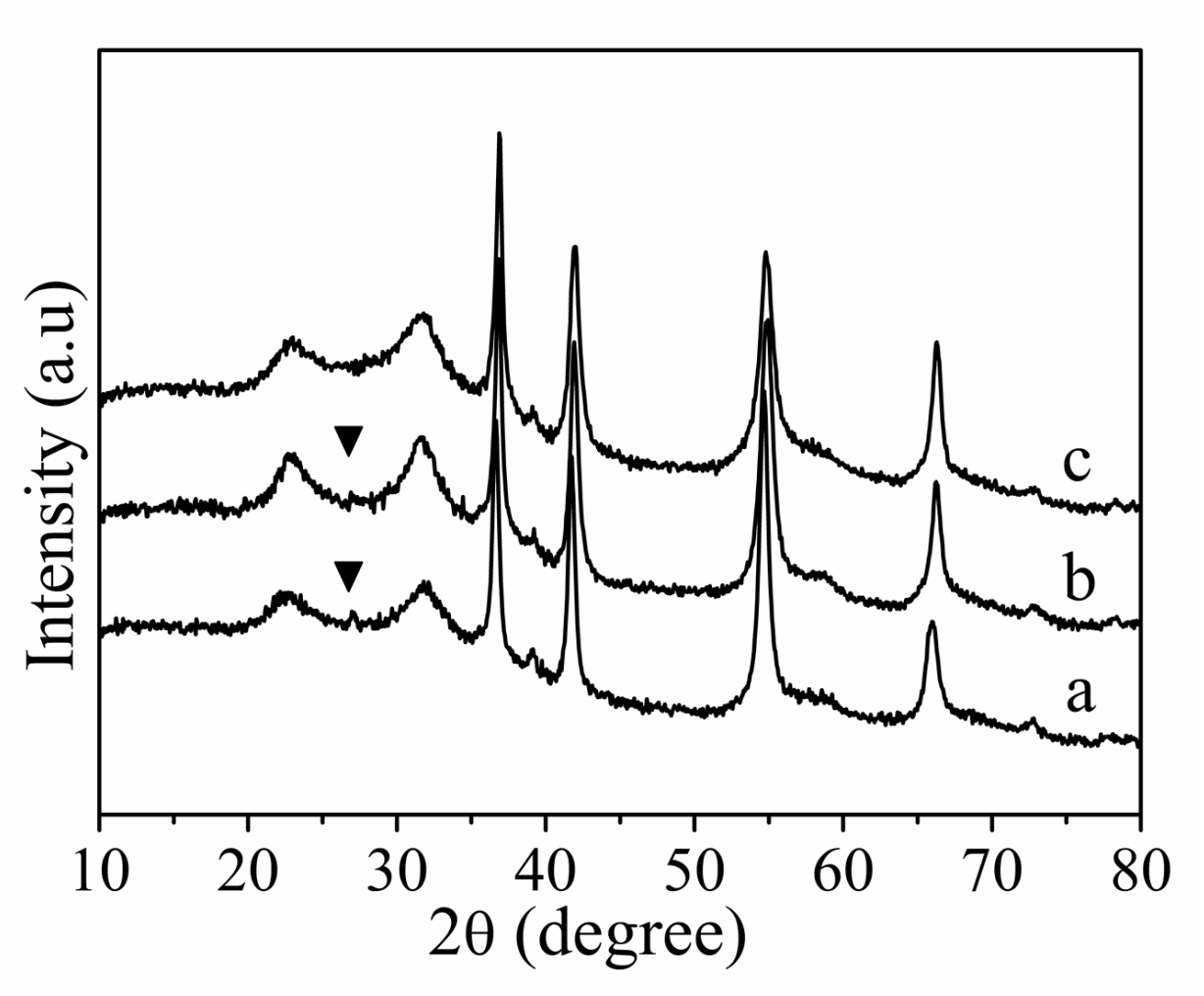

Figure S2. XRD patterns of the samples synthesized with different amounts of octylamine: a) 0; b) 0.5 mmol; c) 1.0 mmol. The reflection indicated with a black triangle is an impurity peak, which possibly is from the nanorods shown in Figure S1a).

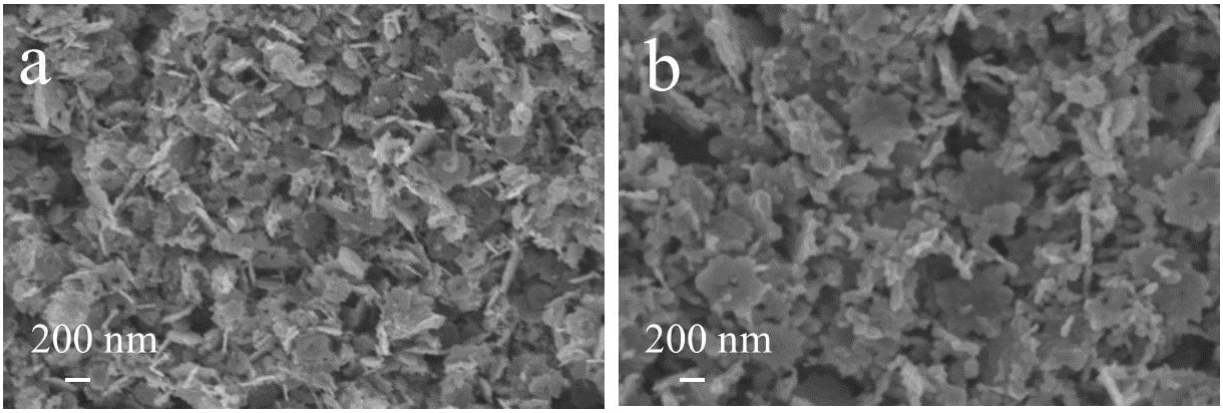

Figure S3. SEM images of samples synthesized at different temperatures: a) 200°C; b) 220°C. All other parameters were kept constant.

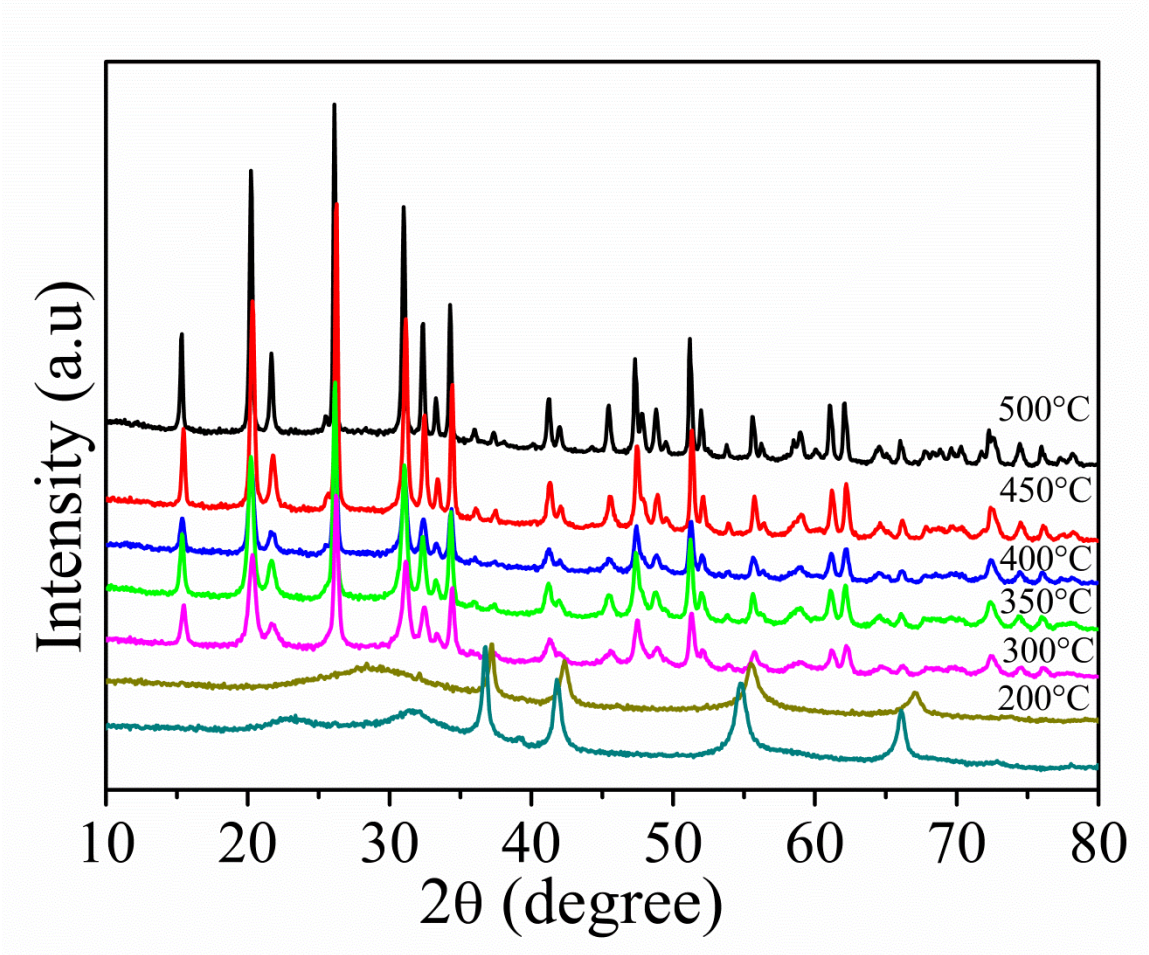

Figure S4. XRD patterns of the V_2O_3 nanoplatelets annealed in air at different temperatures for 2 hours.

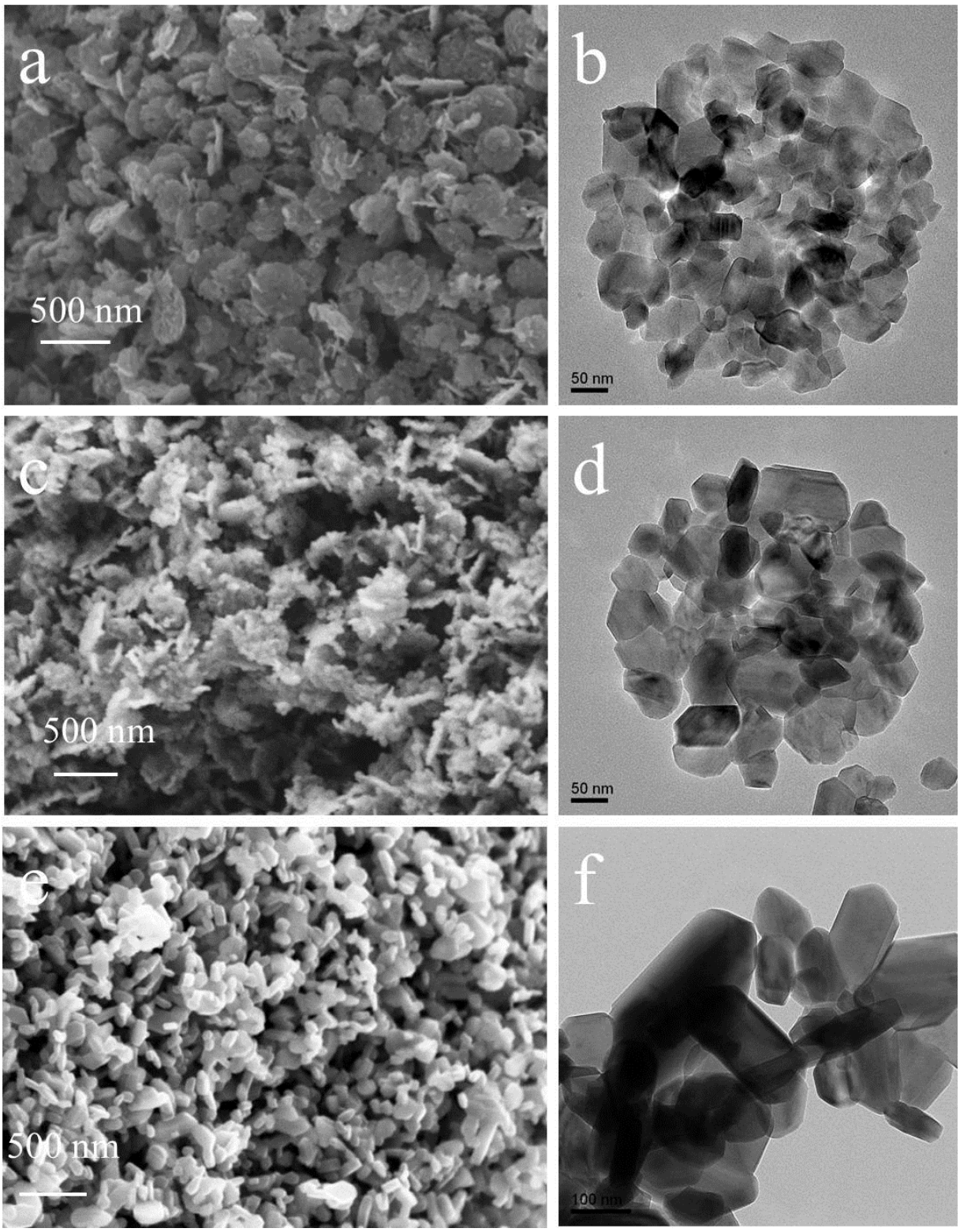

Figure S5. SEM and TEM images of the products annealed in air at different temperatures for 2 hours: a-b) 400°C; c-d) 450°C; e-f) 500°C.

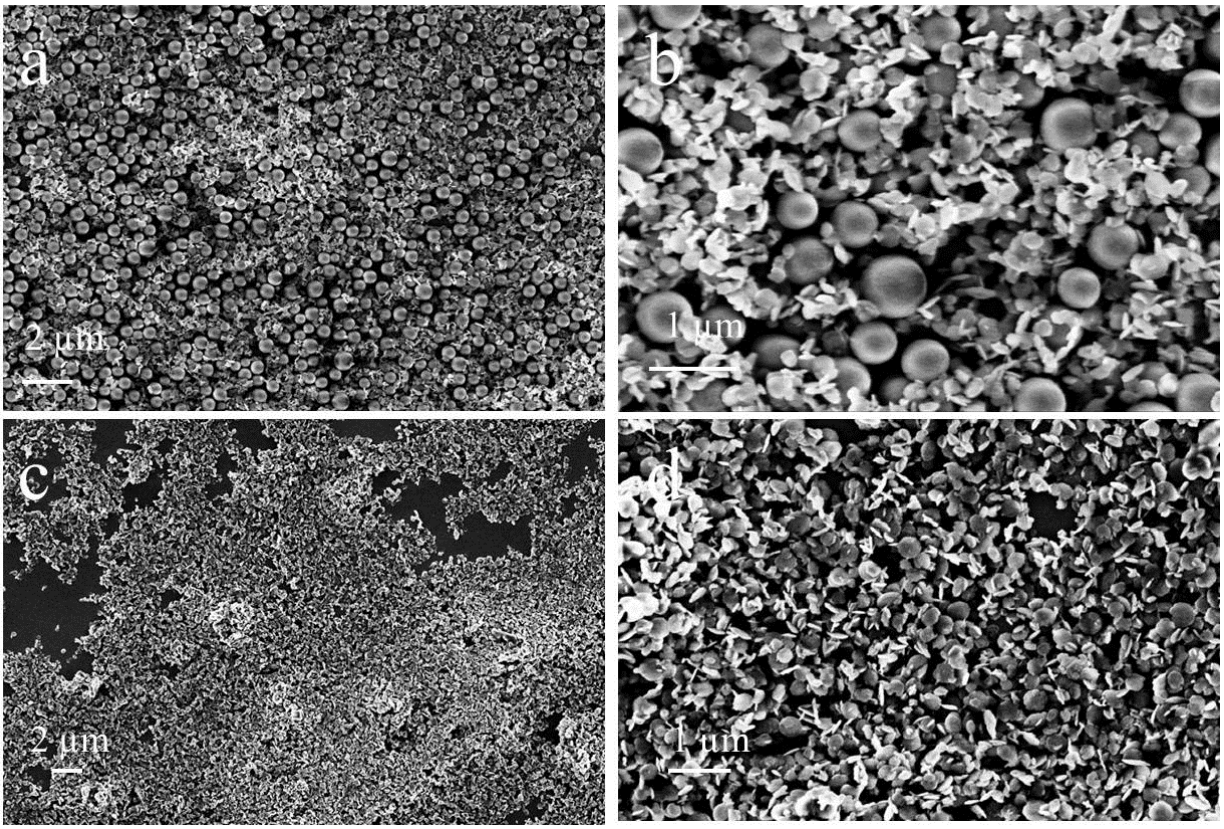

Figure S6. a-b) SEM images of the product obtained after hydrothermal treatment of V_2O_3 nanoplatelets with glucose without the separation step; c-d) SEM images of the product obtained after the separation step.

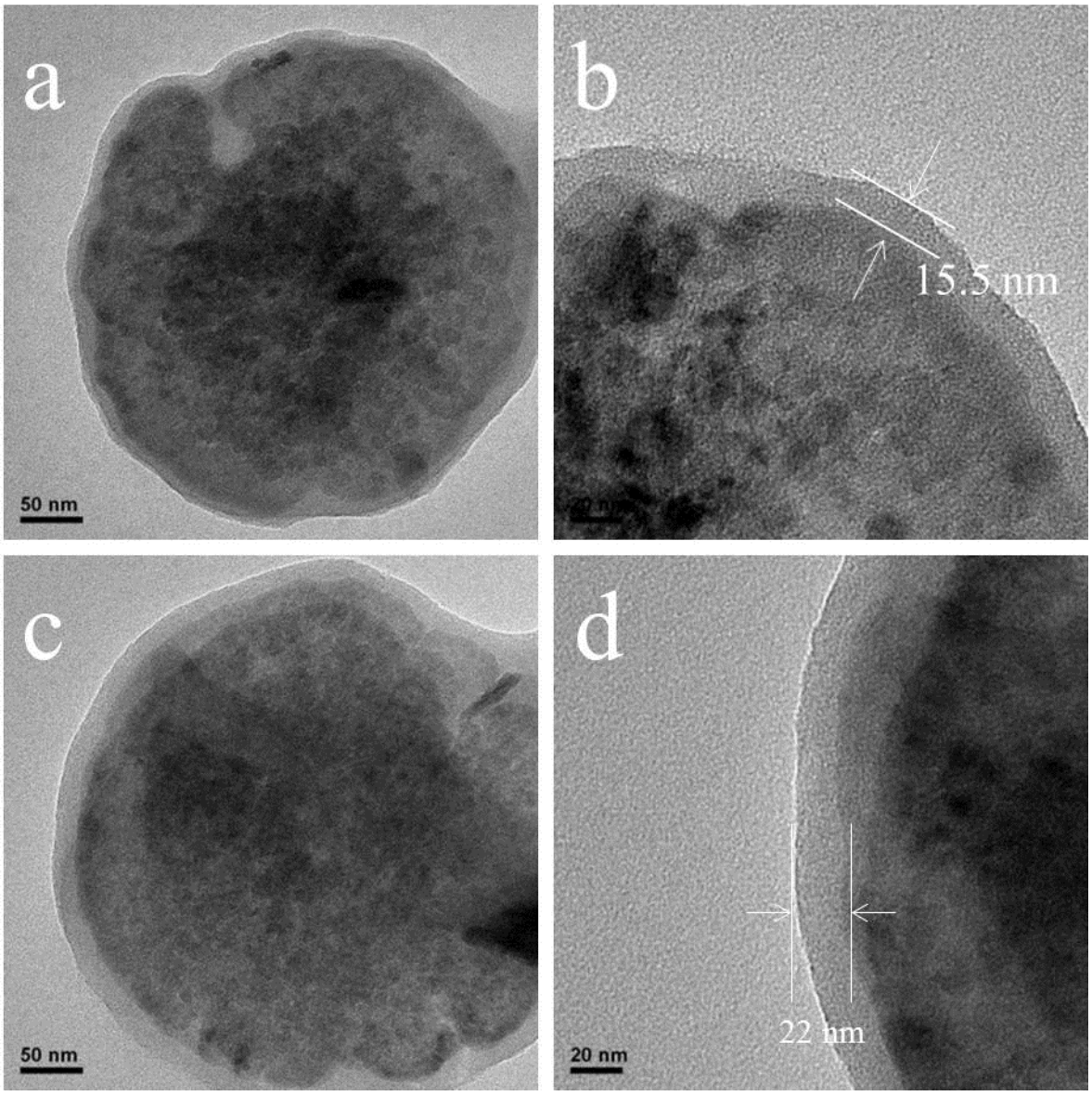

Figure S7. TEM images of V_2O_3 nanoplatelets@polysaccharide particles synthesized with different amounts of glucose: a-b) 1.8 g; c-d) 2.0 g.

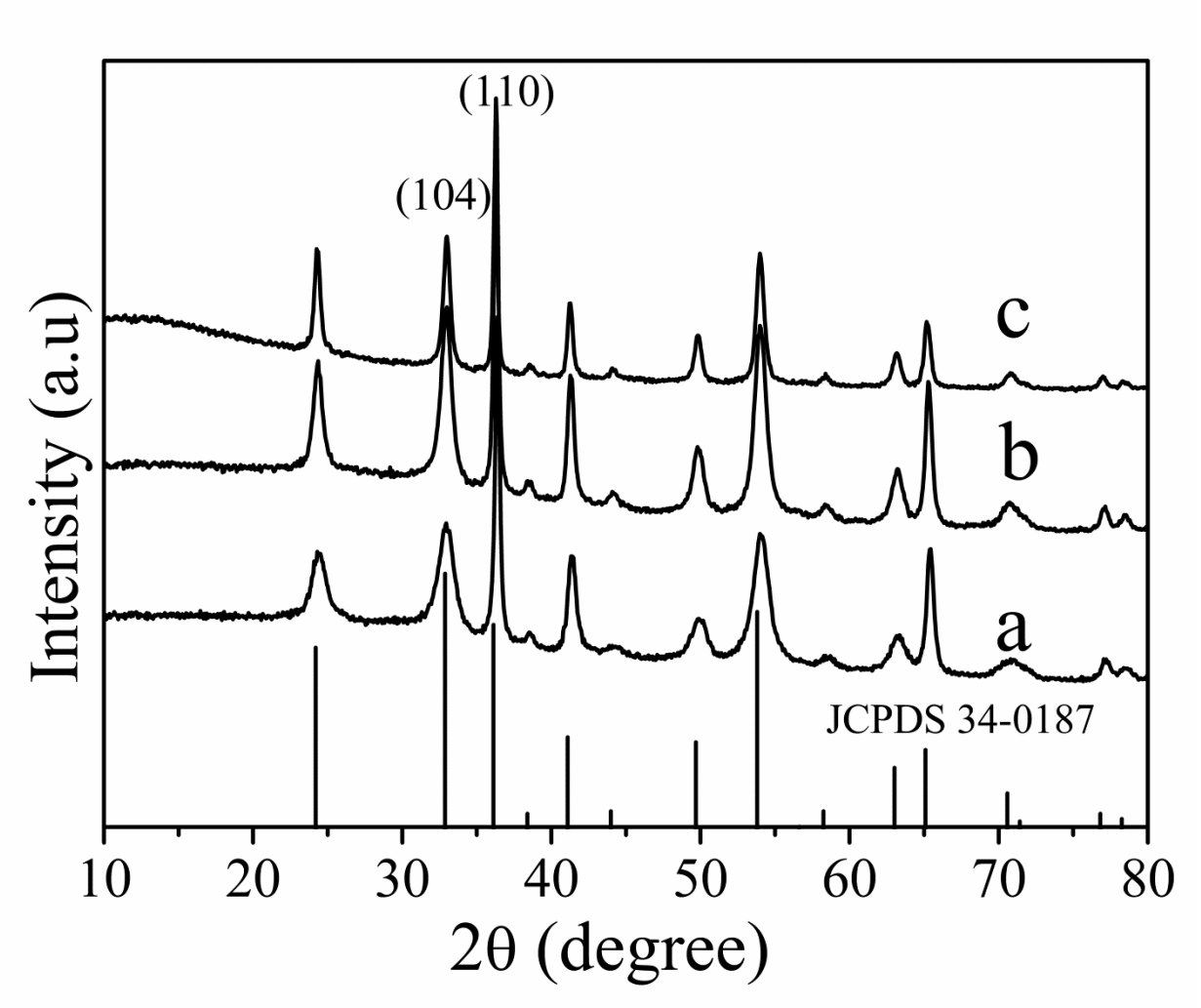

Figure S8. XRD patterns of V_2O_3 nanoplatelets@carbon obtained by annealing V_2O_3 nanoplatelets@polysaccharide (synthesized with 1.6 g glucose) at different temperatures under N_2: a) 500 °C; b) 600 °C; c) 700 °C.

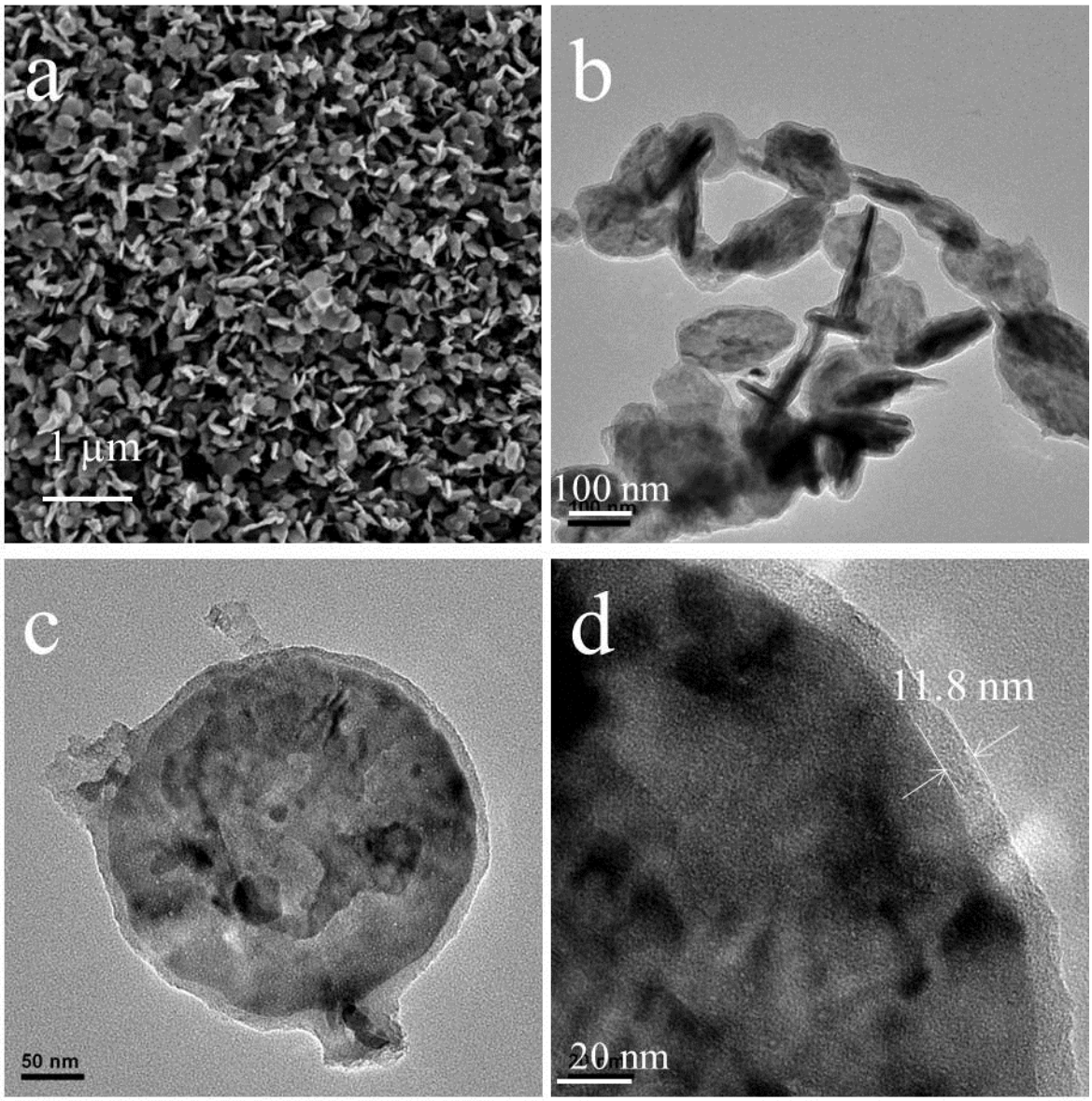

Figure S9. (a) SEM overview image and (c-d) TEM images of V_2O_3 nanoplatelets@carbon core-shell structures obtained by annealing V_2O_3 nanoplatelets@polysaccharide (synthesized with 1.8 g glucose) under N_2 at 700 °C for 4 h.

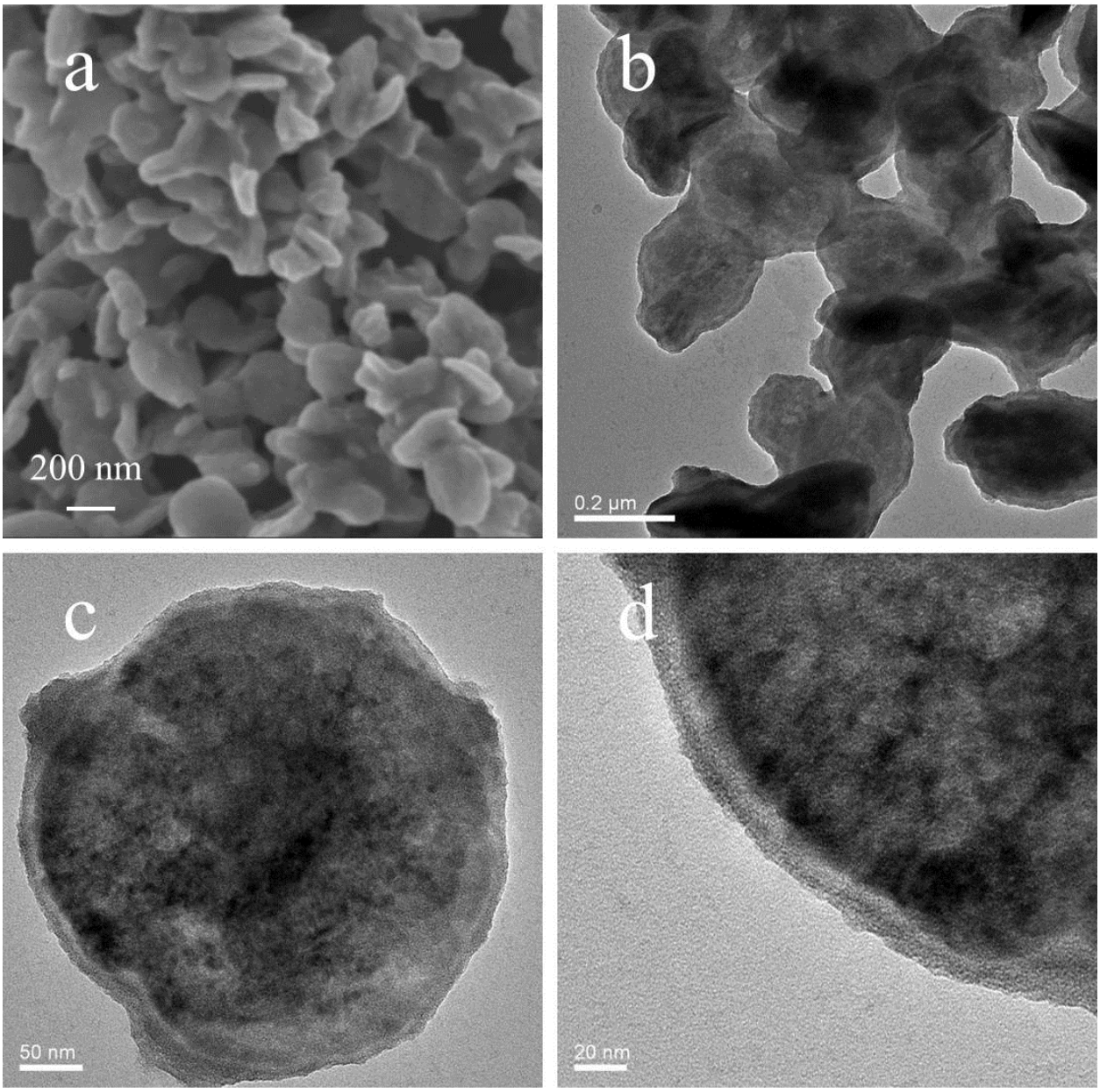

Figure S10. a) SEM overview image and b) TEM image of V_2O_3 nanoplatelets @polysaccharide@amorphous TiO_2; c) TEM image of a single nanoplatelet; d) magnified image of c).