

Supporting Information

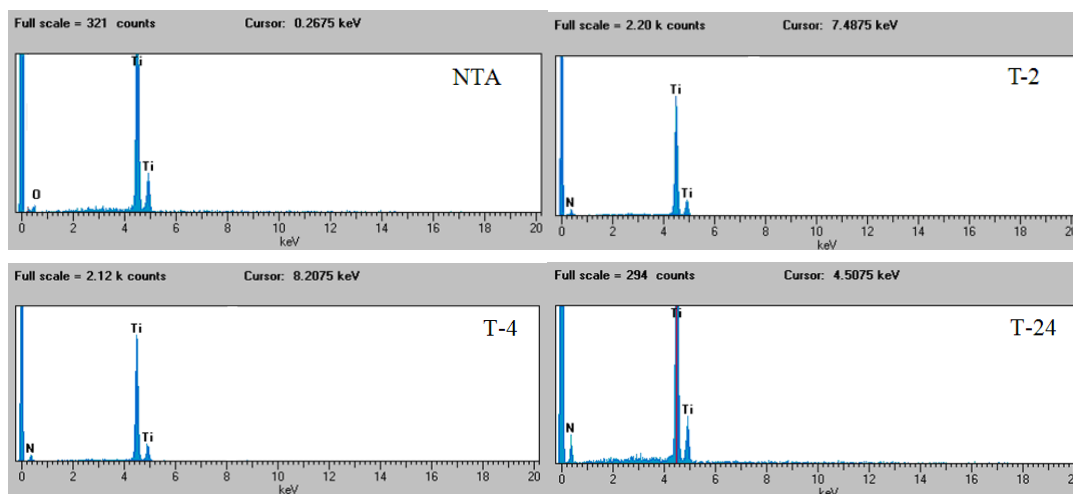


Figure S1 EDS spectra of NTA, T-2, T-4 and T-24

Figure S1 shows the main constituent elements, determined by EDS, of the products obtained at different t_N . Only Ti and O are detected by EDS in NTA. When NTA is nitrified for a long enough duration, for example, 2 h, 4 h, and 24 h, only Ti and N elements are detected in resultant nitrified samples T-2, T-4, and T-24.

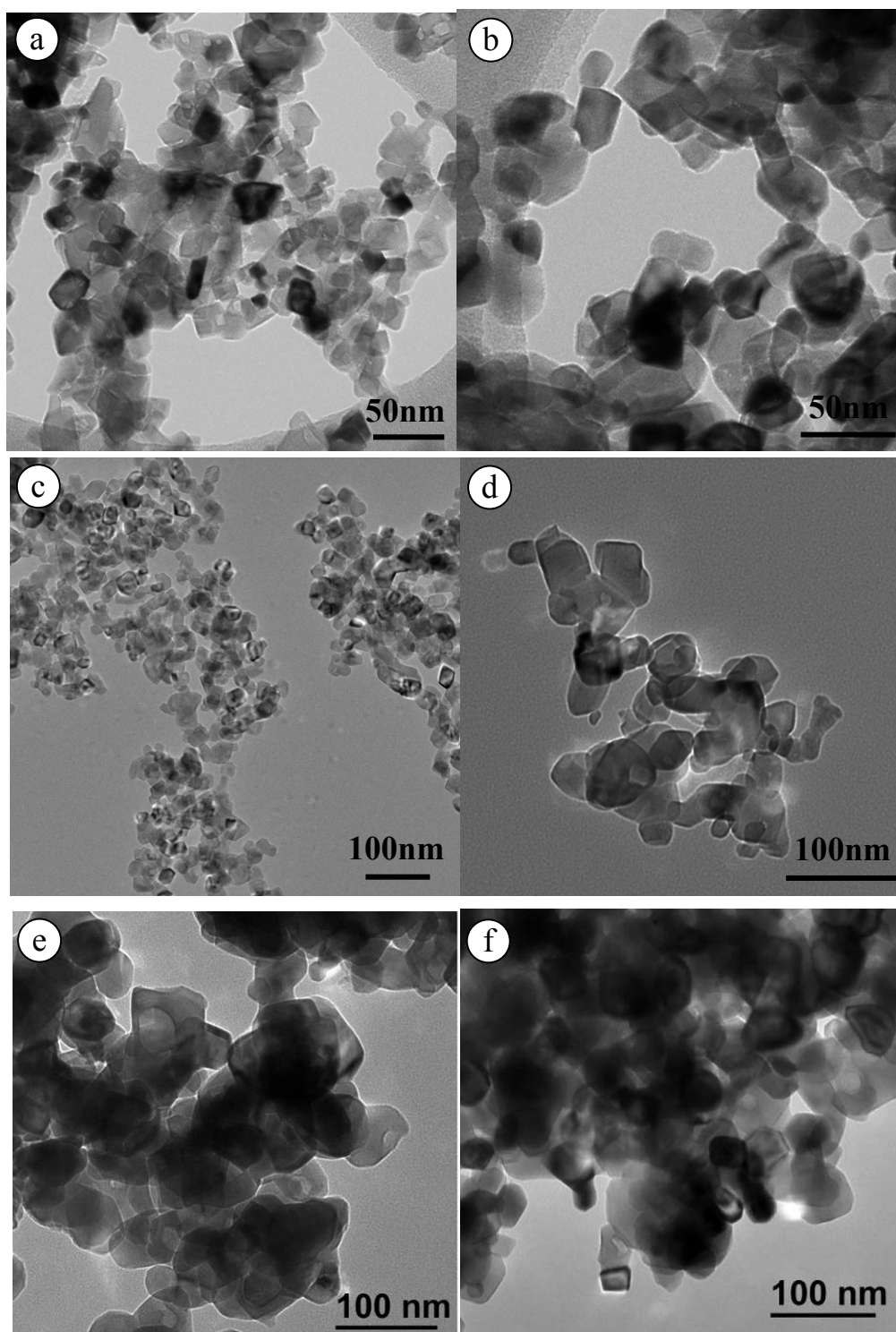


Figure S2 TEM images of TiN nanocrystals obtained at various t_N : (a) 2 h; (b) 3 h; (c) 4 h; (d) 8 h; (e) 12 h and (f) 24 h.

Figure S2 shows typical morphological features of as-prepared TiN products obtained at different nitriding time. All the products are nanoparticles and have irregular morphology.

Table S1. The content of N of the samples obtained at different t_N

Sample	N content (wt.%)
T-2	18.84
T-4	—
T-8	19.92
T-12	21.19
T-24	21.66
Stoichiometric TiN	22.63

Table S1 shows the contents of N of the samples obtained at different t_N . It can be seen that extending t_N leads to more N in samples; and even when t_N is extended to 24 h, the content of N of sample T-24 is still lower than that of stoichiometric TiN.