Supporting Information

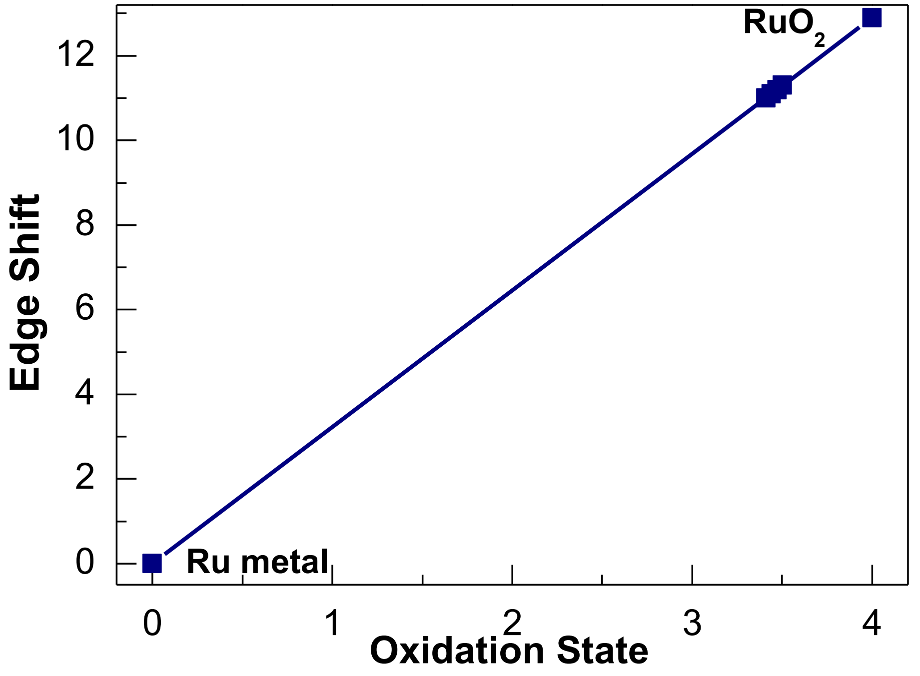
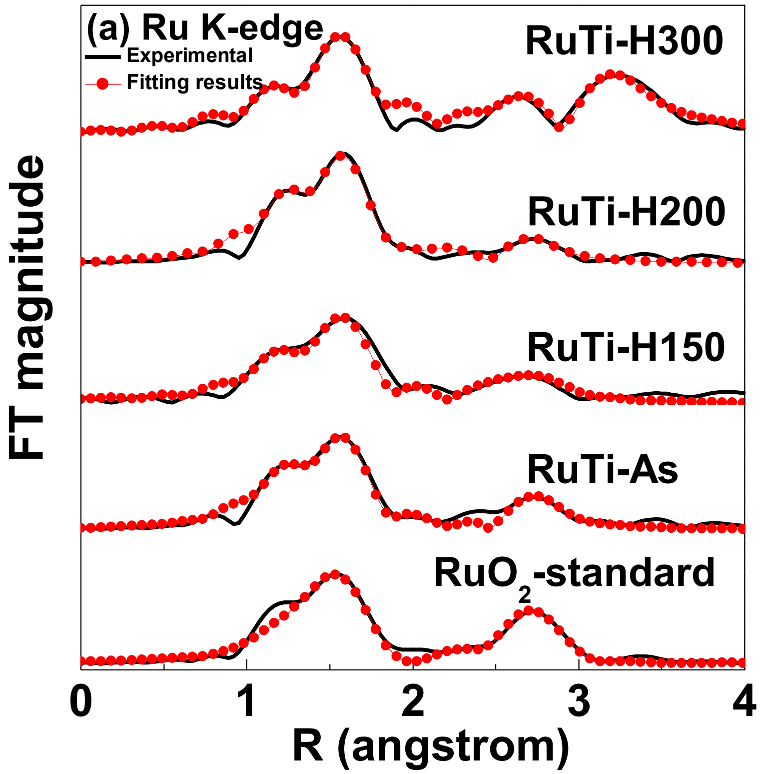


Figure S1† Distribution of Ru oxidation state for various binary Ru-Ti oxides, Ru metal and RuO_2 are used as reference samples.



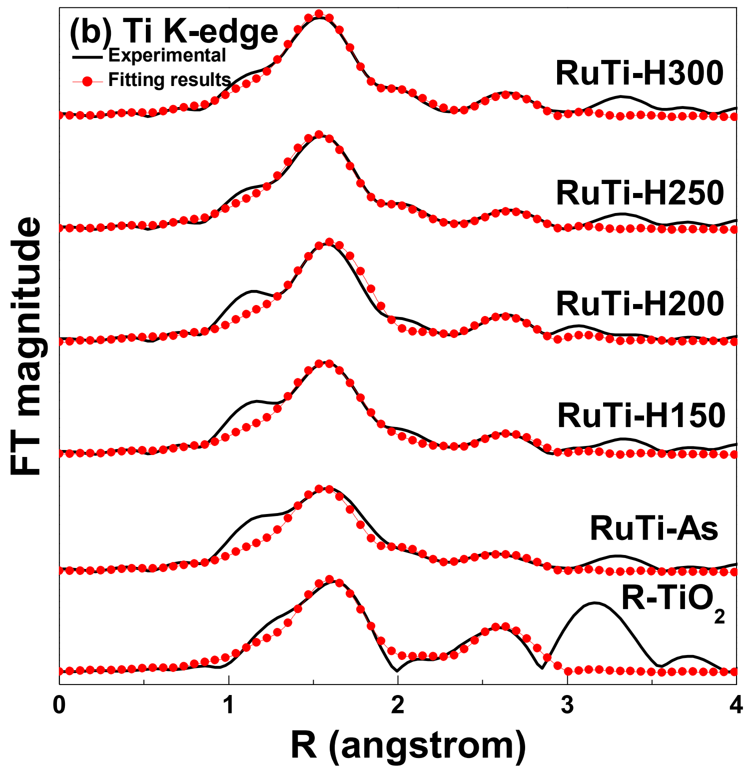


Figure S2† Fitting results of (a) Ru and (b) Ti K-edge EXAFS spectra for the standard RuO_2, rutile TiO_2 and various binary Ru-Ti oxides.

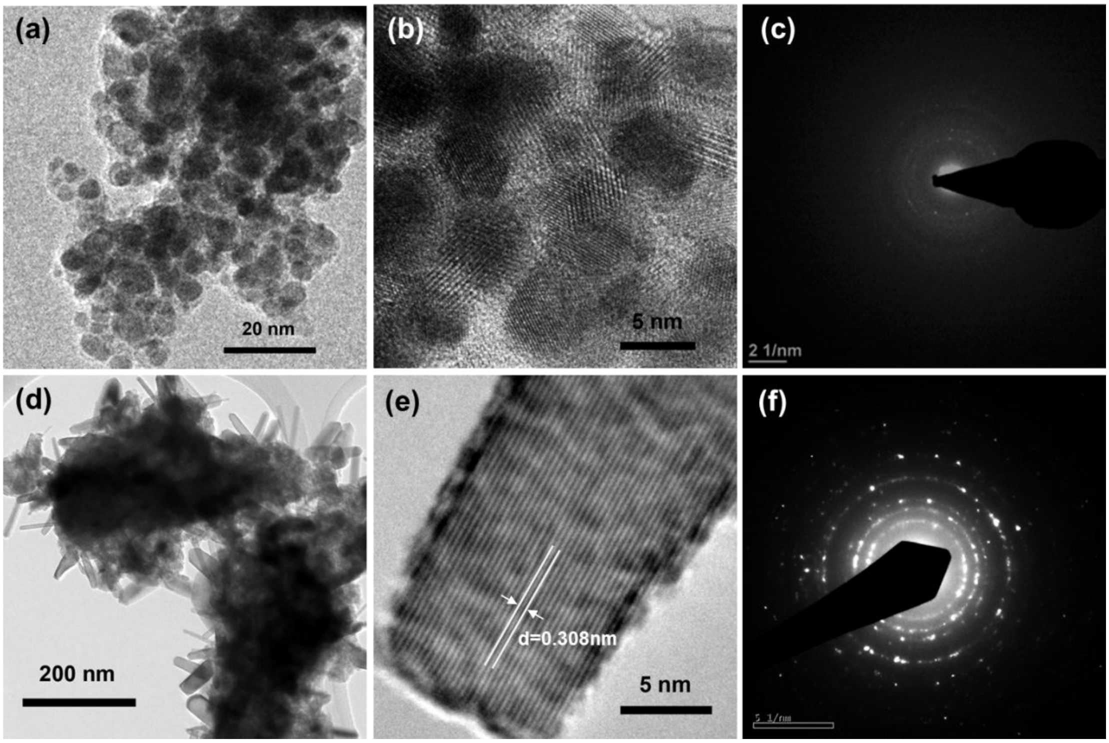


Figure S3† HR-TEM morphologies and the corresponding electron diffraction patterns for (a-c) RuTi-200 and (d-f) RuTi-300. The clear lattice fringe and diffraction point of RuTi-H300 indicates an increased crystallinity characteristic and the formation of long-range order structure.

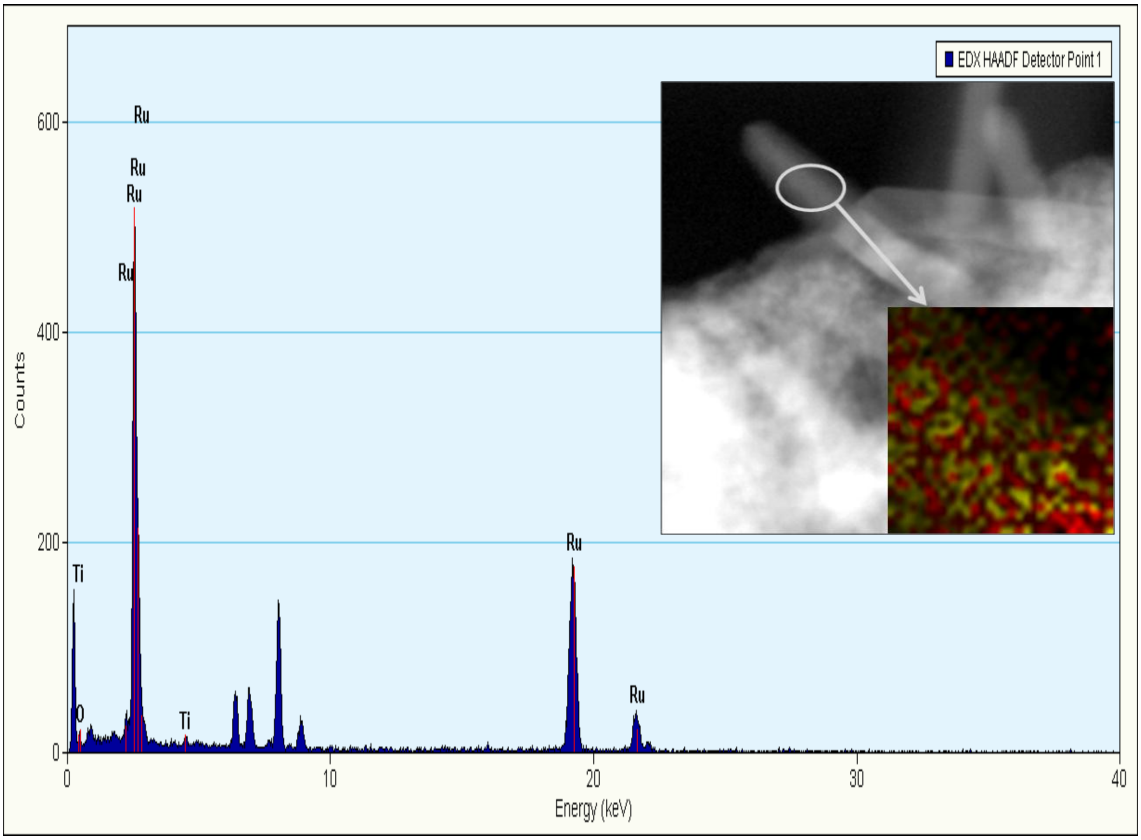


Figure S4† HR-TEM image measured at the high angle annular dark field (HAADF) mode and the corresponding EDS mapping results of RuTi-300. The red and yellow spots shown in the mapping profile stand for Ru and Ti elements, respectively. It can be clearly seen that a small amount of Ti element exists inside the RuO_2 nanorods. The calculated Ru/Ti atomic ratio is approximately 96.2/3.8 (The intensity of Ti is lower than that of Ru).

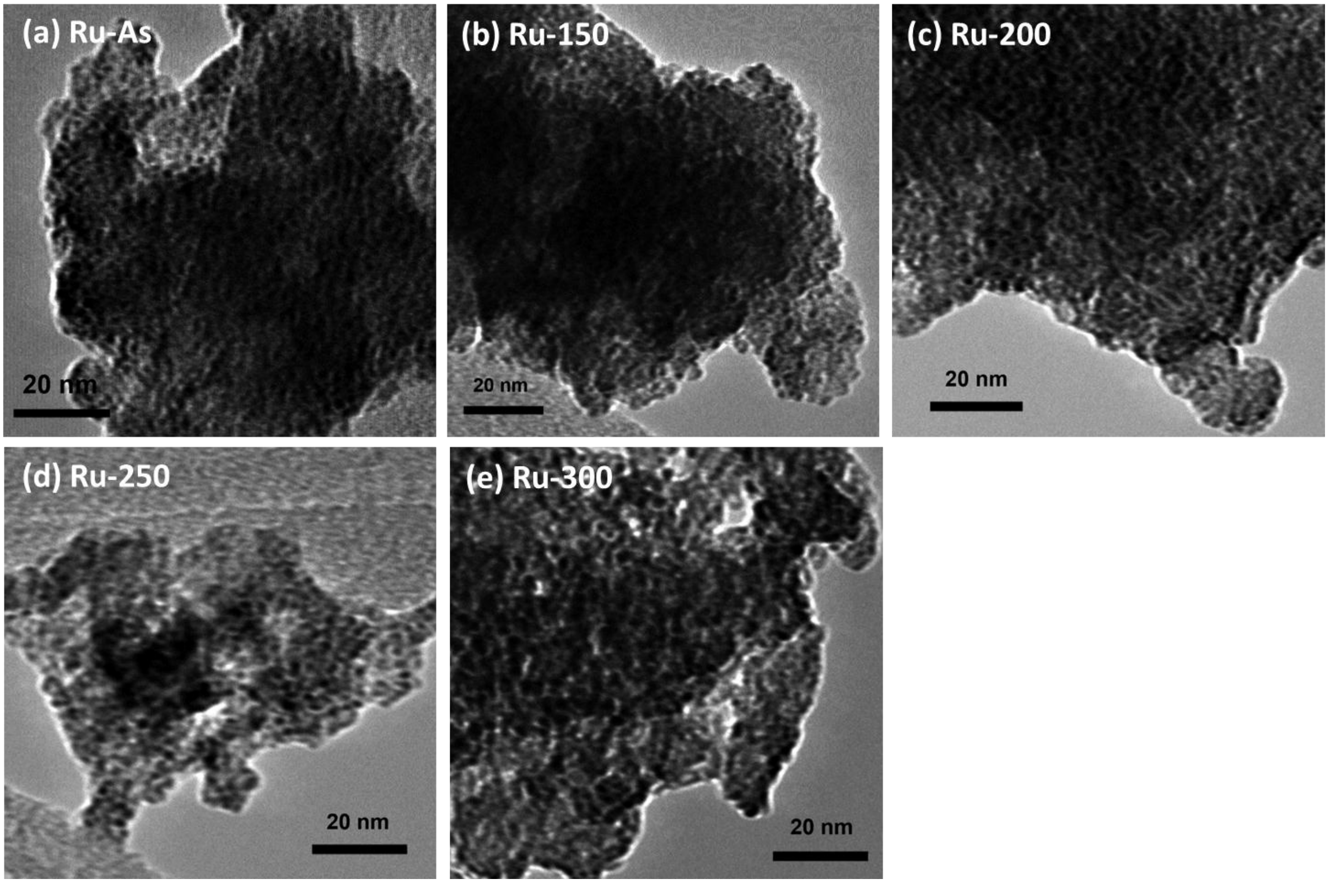


Figure S5† TEM morphologies for (a) Ru-as, (b) Ru-150, (c) Ru-200, (d) Ru-250, (e) Ru-300, and (f) Ru-300 samples.

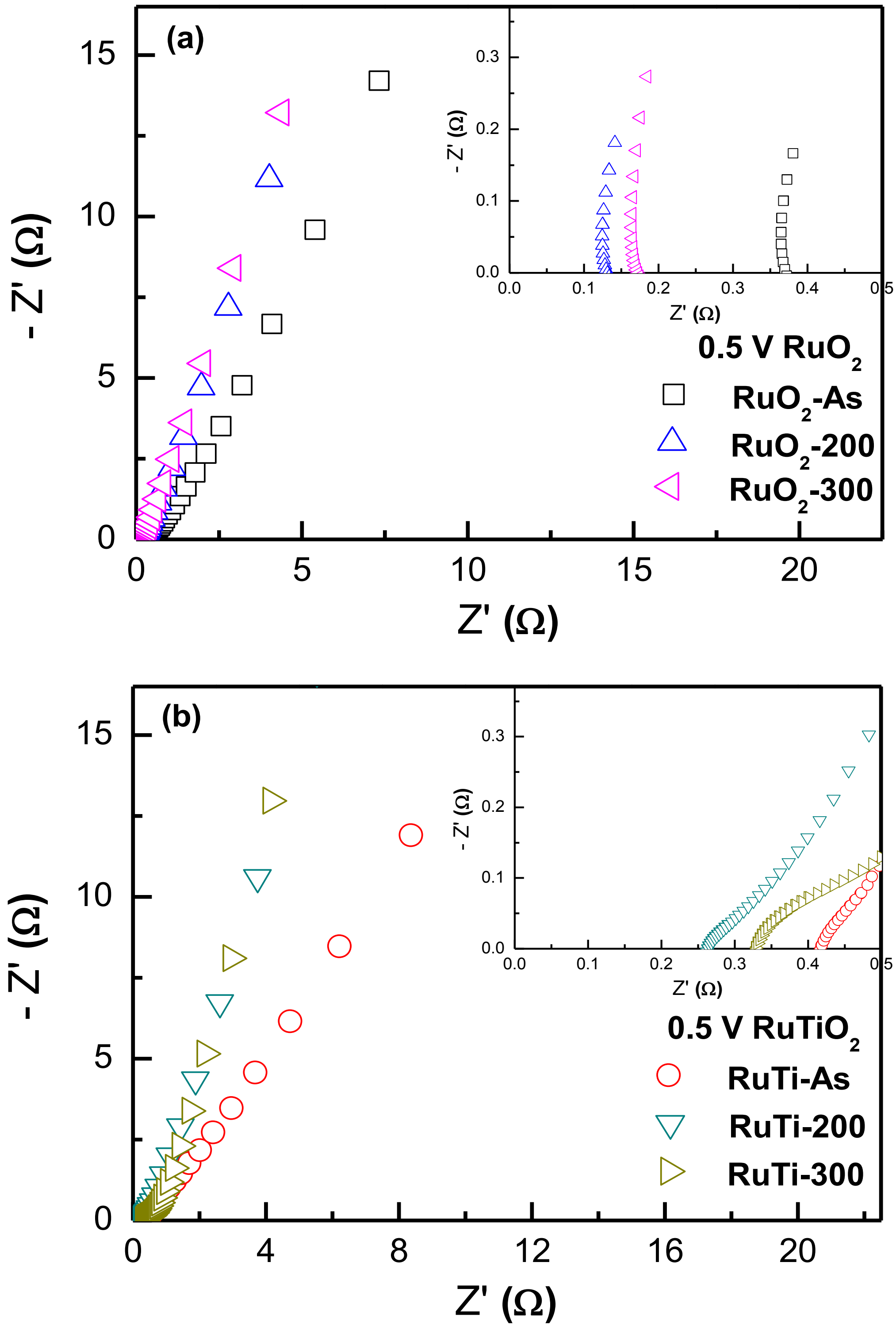


Figure S6† Electrochemical impedance spectra of (a) RuO_2 and (b) $RuTiO_2$ nanocomposites annealed at various temperatures. EIS results were measured at 0.5 V in 0.5 M H_2SO_4. Inset shows the spectra in the high-frequency region.

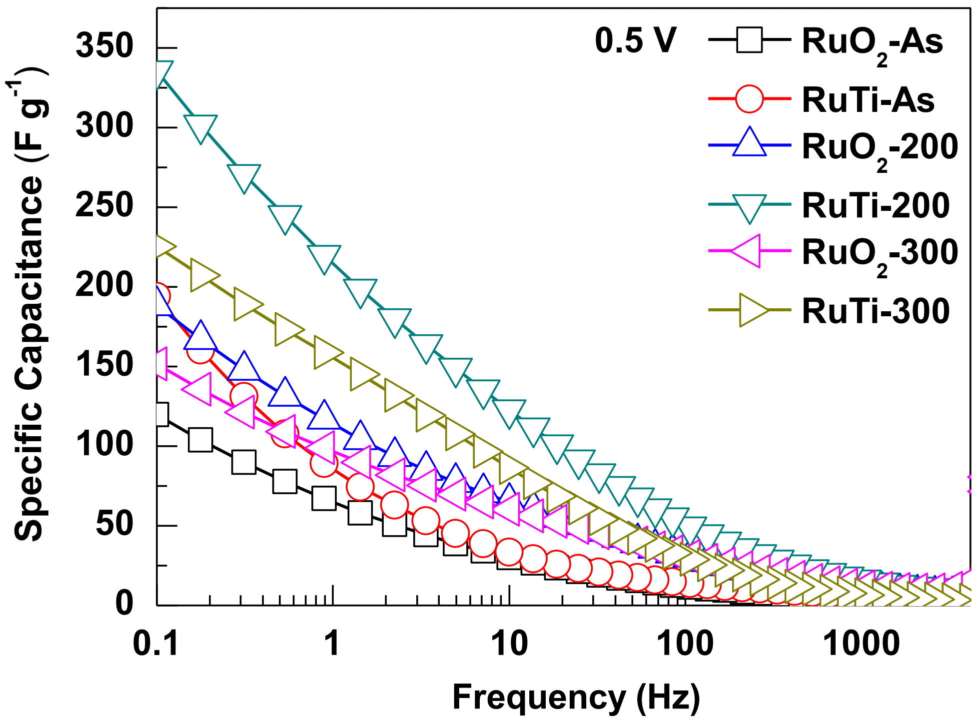


Figure S7† Frequency dependence of specific capacitance for RuO_2 and $(Ru\text{-}Ti)O_2$ electrode annealed at various temperatures (0.5±0.02 mg cm^{-2}). The results were measured at 0.5 V and the electrolyte for the electrochemical measurements is 0.5 M H_2SO_4.