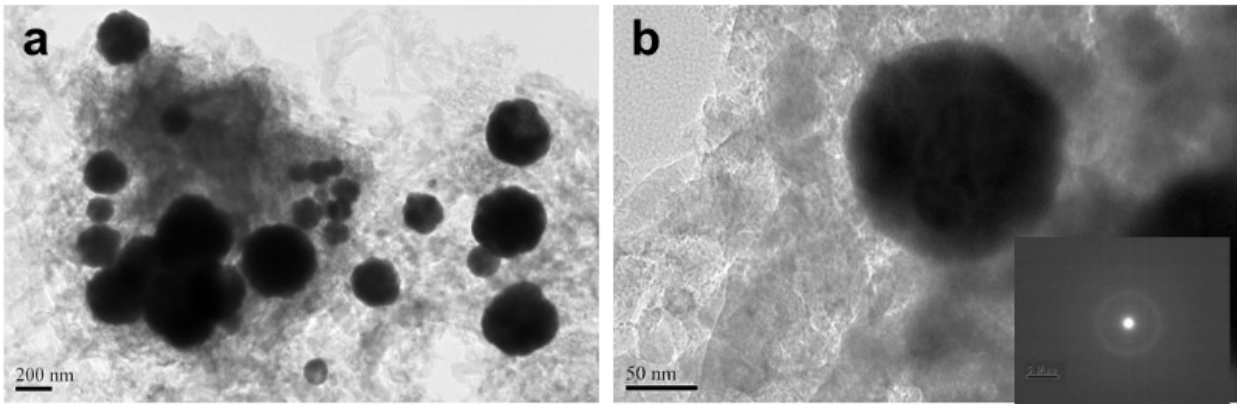

Fig. S1. (a) Low- and (b) high- magnification TEM images of Ni-P/CNTs-WB catalyst. Inset in Fig. S1b shows the corresponding SAED pattern.

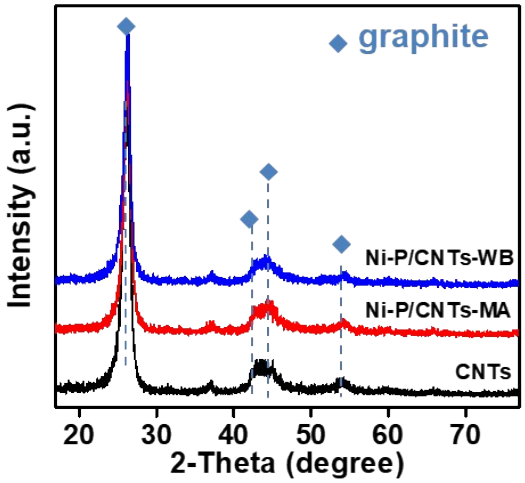

Fig. S2. XRD patterns of Ni-P/CNTs-MA, Ni-P/CNTs-WB, and bare CNTs.

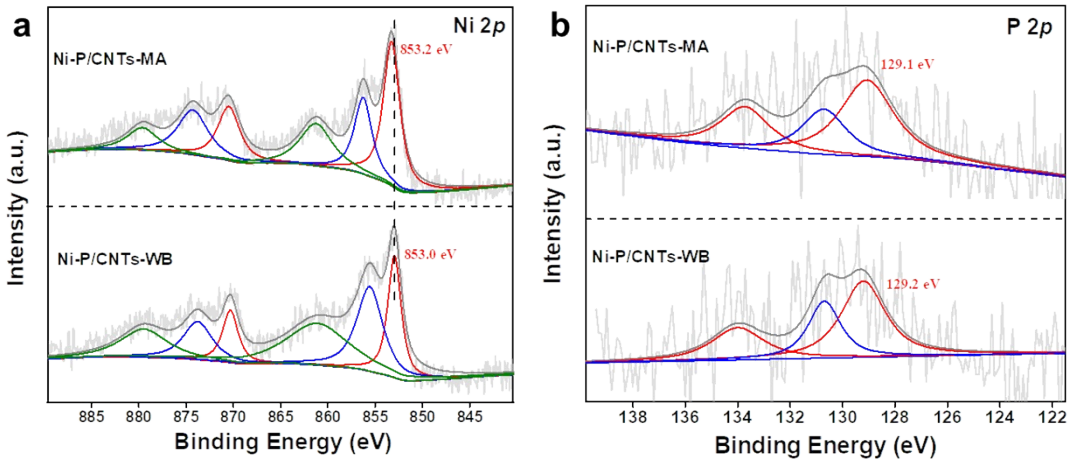

Fig. S3. XPS spectra of Ni-P/CNTs-MA and Ni-P/CNTs-WB.

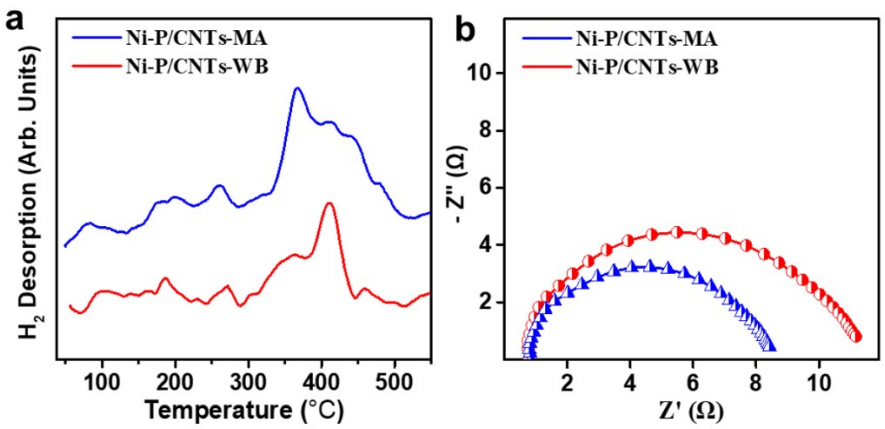

Fig. S4. (a) H_2-TPD patterns and (b) EIS curves of the Ni-P/CNTs-MA and Ni-P/CNTs-WB.

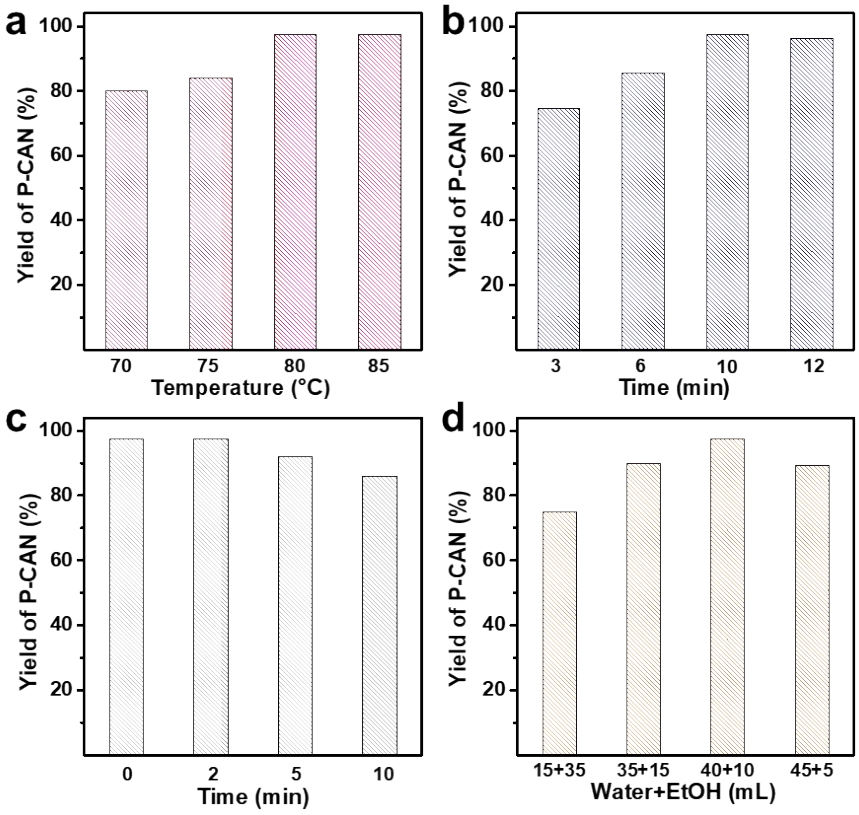

Fig. S5. The *p*-CNB hydrogenation activity of Ni-P/CNTs-MA with different microwave preparation conditions. (b) The preparation temperature adjustment. (a) The time taken to raise the temperature to 80 °C. (c) The time (*i.e.*, 0, 2, 5, 10 min) at 80 °C after a heating time of 10 min. (d) The effect of different co-solvent ratios with a 10 min temperature rises to 80 °C and then 0 min at 80 °C. Hydrogenation reaction conditions: 0.14 mmol Ni, 7.0 mmol *p*-CNB, 20 mL EtOH, T = 110 °C, p(H_2) = 3 MPa, reaction time = 100 min, stirring rate = 1050 rpm.

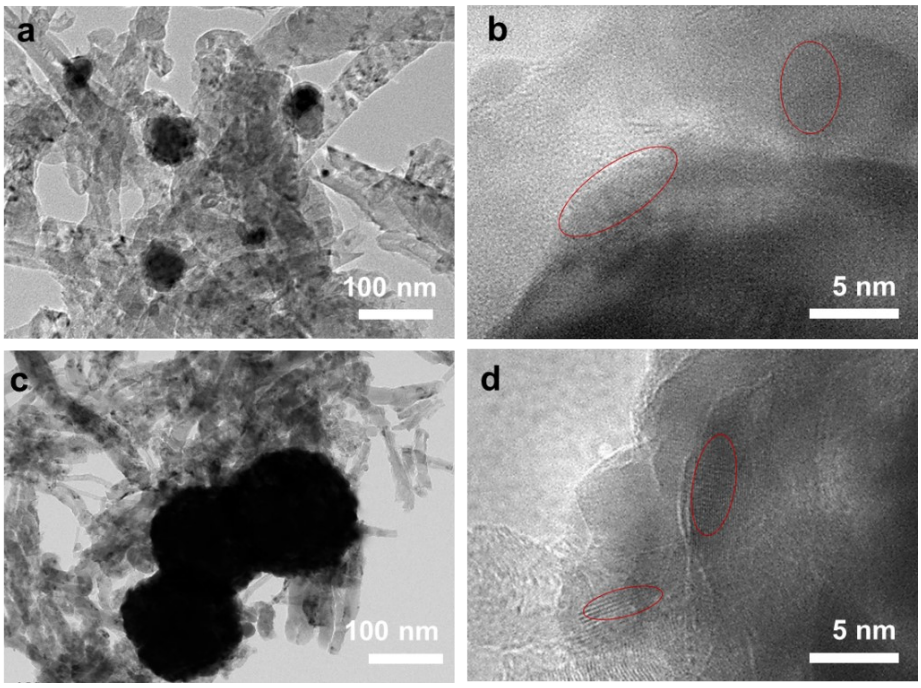

Fig. S6. TEM images of samples treated with N_2 at 400 °C for 2 h. (a, b) Ni-P/CNTs-MA, (c, d) Ni-P/CNTs-WB. The circled area in b and d indicates crystallization at the edge of both samples.

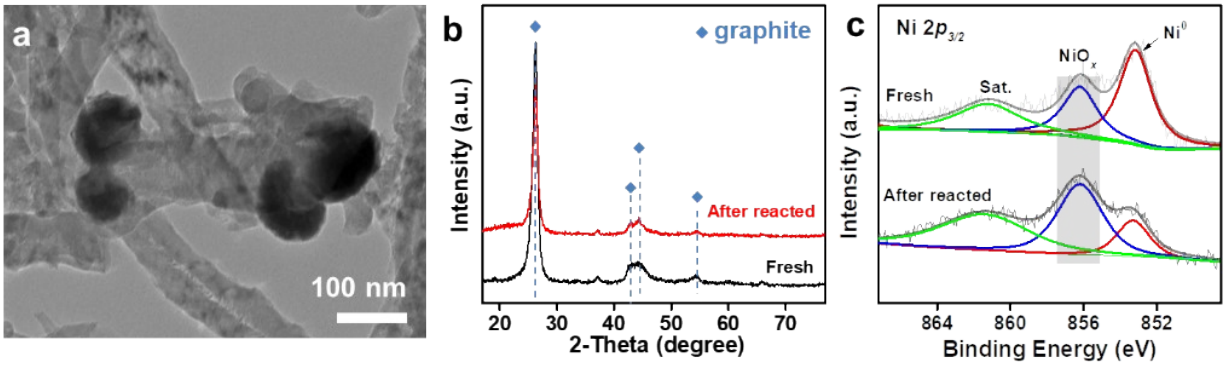

Fig. S7. (a) TEM image of the Ni-P/CNTs-MA catalyst after the hydrogenation reaction. Comparison of (b) XRD patterns and (c) XPS spectra of the Ni-P/CNTs-MA catalyst before and after reaction.