Novel synthetic approach to PtCo alloy nanoparticles by reduction of nanometer-sized metal coordination polymers

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Electronic Supplementary Information (ESI)

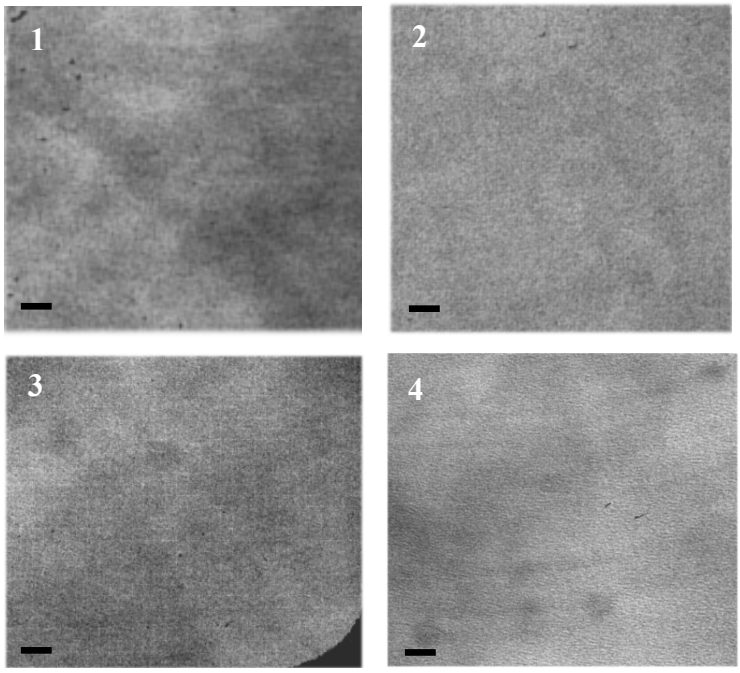

Fig. S1 TEM images of the compounds **1**-**4**. The numbers in the figure refer to those of the compound. Scale bar = 20 nm.

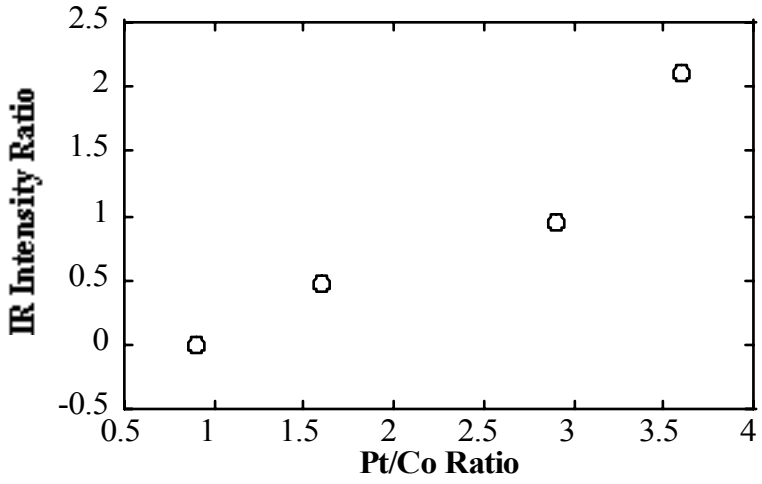

Fig. S2 The relation between Pt/Co ratio and the IR intensity ratio of Pt^{II}-CN-Pt^{IV} to Pt^{II}-CN-Co.

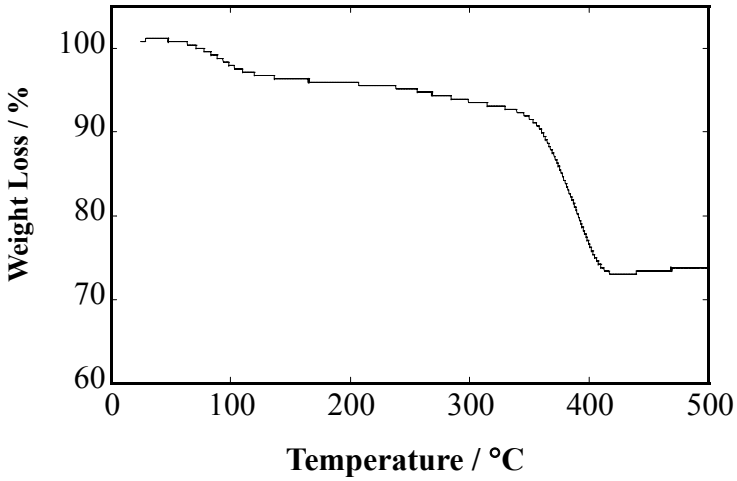

Fig. S3 TGA curve of the compound **1** in the H_2 atmosphere (N_2/H_2 = 10, total flow rate is 110 mL/min.).

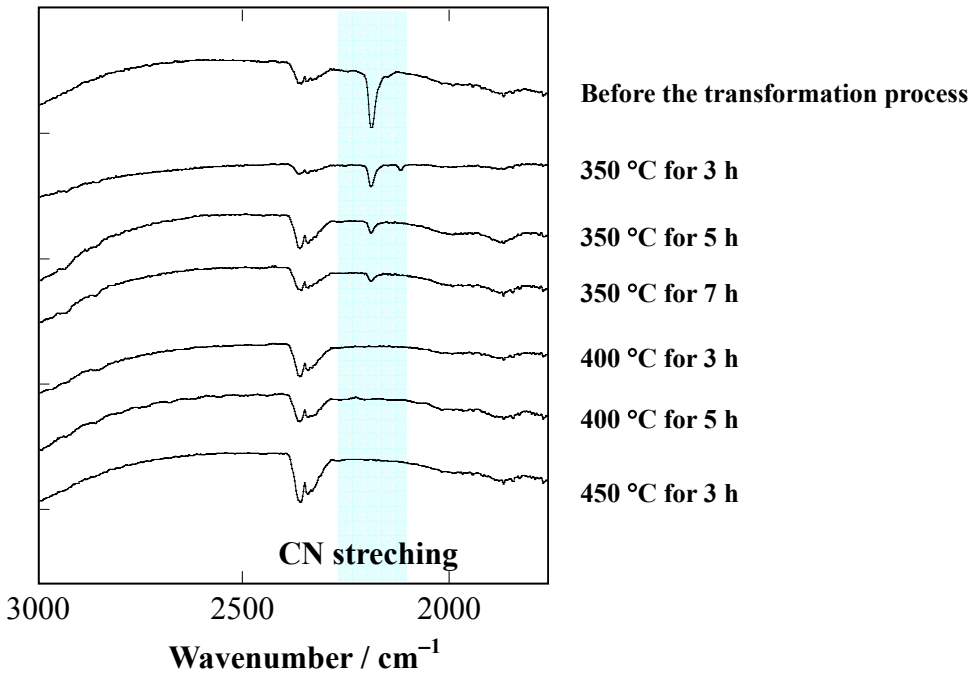

Fig. S4 IR spectra of the compound **1** before and after the transformation reaction in the H_2 atmosphere. The reaction temperature and the reaction time are noted in the figure.

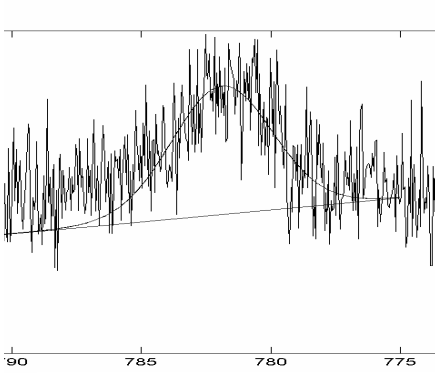

Fig. 5 XPS curve in the Co2p energy range of compound **1** after the transformation reaction in H_2 atmosphere at 350 °C for 3h (top) and at 400 °C for 3h (bottom). The peak at 781.9 eV attributed to the Co sites in Pt^{II}-CN-Pt^{IV}/Co negatively shifts to the peak at 778.2 eV due to metal Co.

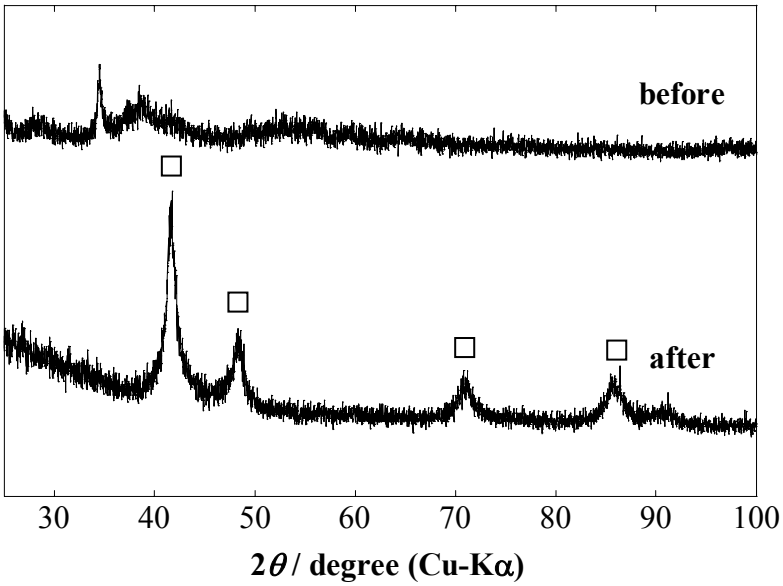

Fig. S6 XRD patterns of the compound **1** before and after the transformation reaction in the H_2 atmosphere at 400 °C for 3h. The peaks marked by squares are assigned to PtCo.