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# Supporting information

## Hyper-cross-linked polymer supported rhodium: an effective catalyst for hydrogen evolution from ammonia borane

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This file includes Figure S1-S4.

**Figure S1.**

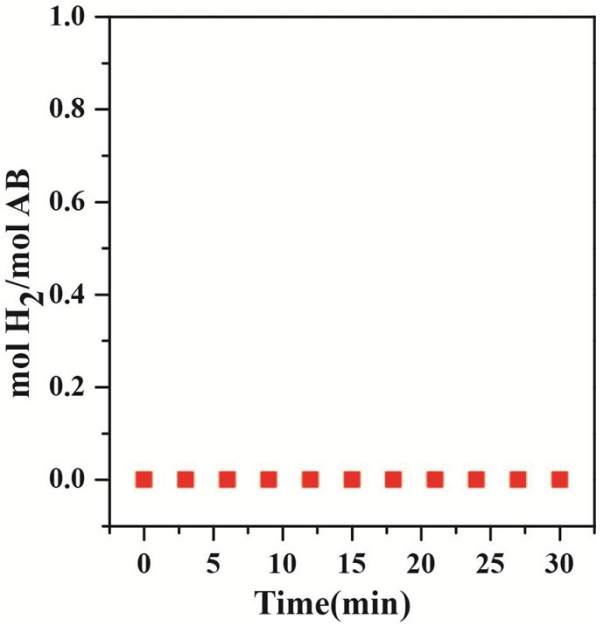


Fig.S1 the plots of mol $H_2$/mol AB versus time for AB hydrolysis with HCP-$PPh_3$ and 200 mM AB at 298 K.

**Figure S2.**

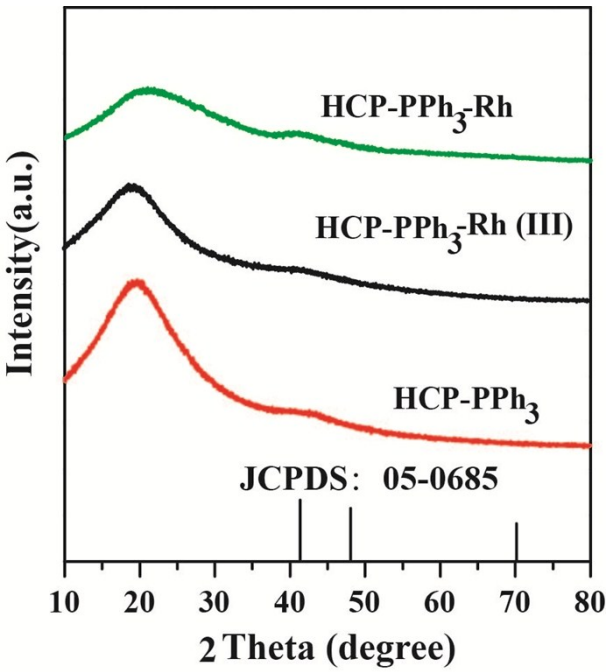


Fig.S2 XRD patterns of HCP-$PPh_3$, HCP-$PPh_3$-Rh (III), and HCP-$PPh_3$-Rh.

Compared with HCP-$PPh_3$ and HCP-$PPh_3$(III), the XRD pattern of the HCP-$PPh_3$-Rh catalyst shown in Fig.S2 displays a weak and broad peak situated at $2\theta = 41^{o}$ corresponded to the (111) plane of Rh because of the small size of Rh NPs, which matches well with the TEM results.

**Figure S3.**

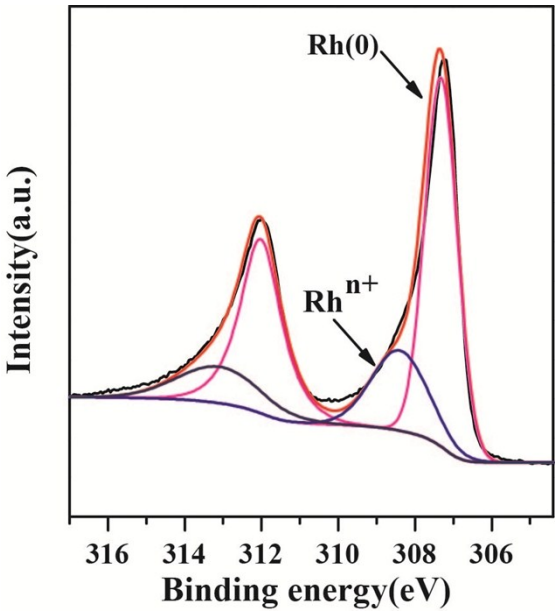


Fig.S3 XPS spectra in the region of Rh 3d (after $Rh_3Cl{\cdot}nH_2O$ catalyzing AB hydrolysis).

As shown in Fig.S3, the binding energy of $Rh^0$ 3d5/2 was 307.3 eV.

**Figure S4.**

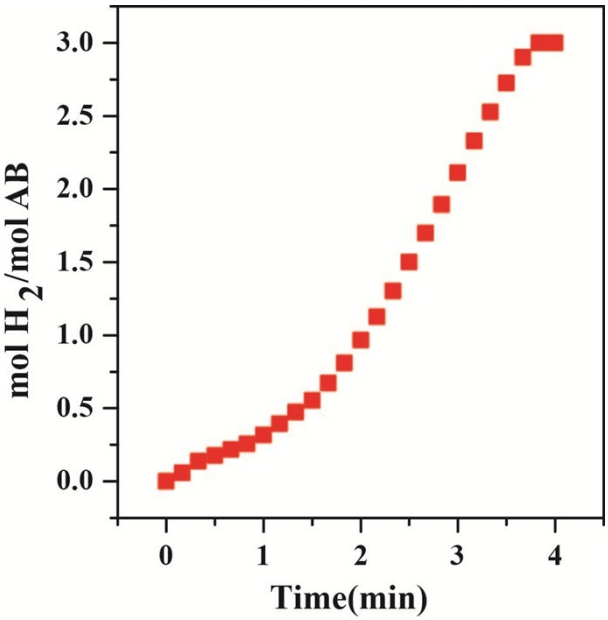


Fig.S4 the plots of mol $H_2$ /mol AB versus time for AB hydrolysis with commercial rhodium oxide at 298 K.