Supporting information

Cu@Pd /C with Controllable Pd Dispersion as a Highly Efficient Catalyst for Hydrogen Evolution from Ammonia Borane

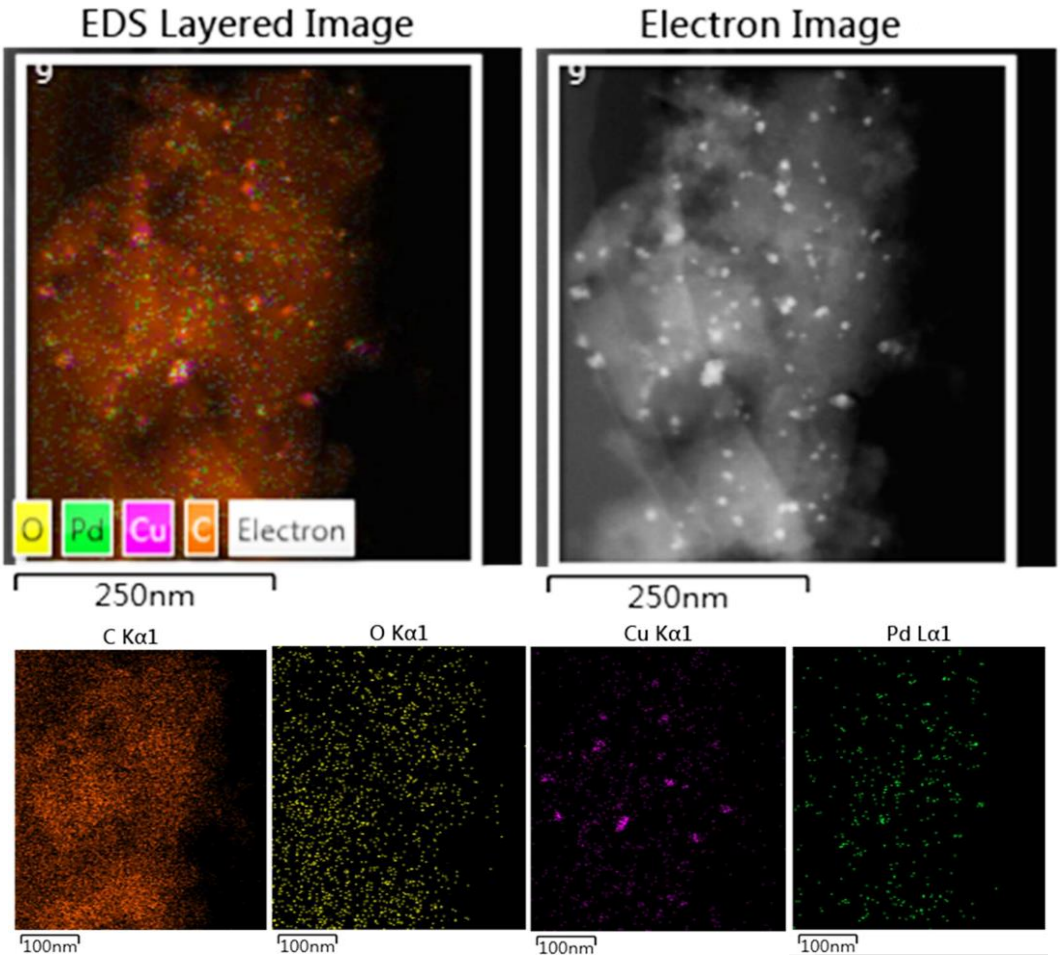

Figure S1. EDS mapping images of Cu@$Pd_{0.75}$/C-320.

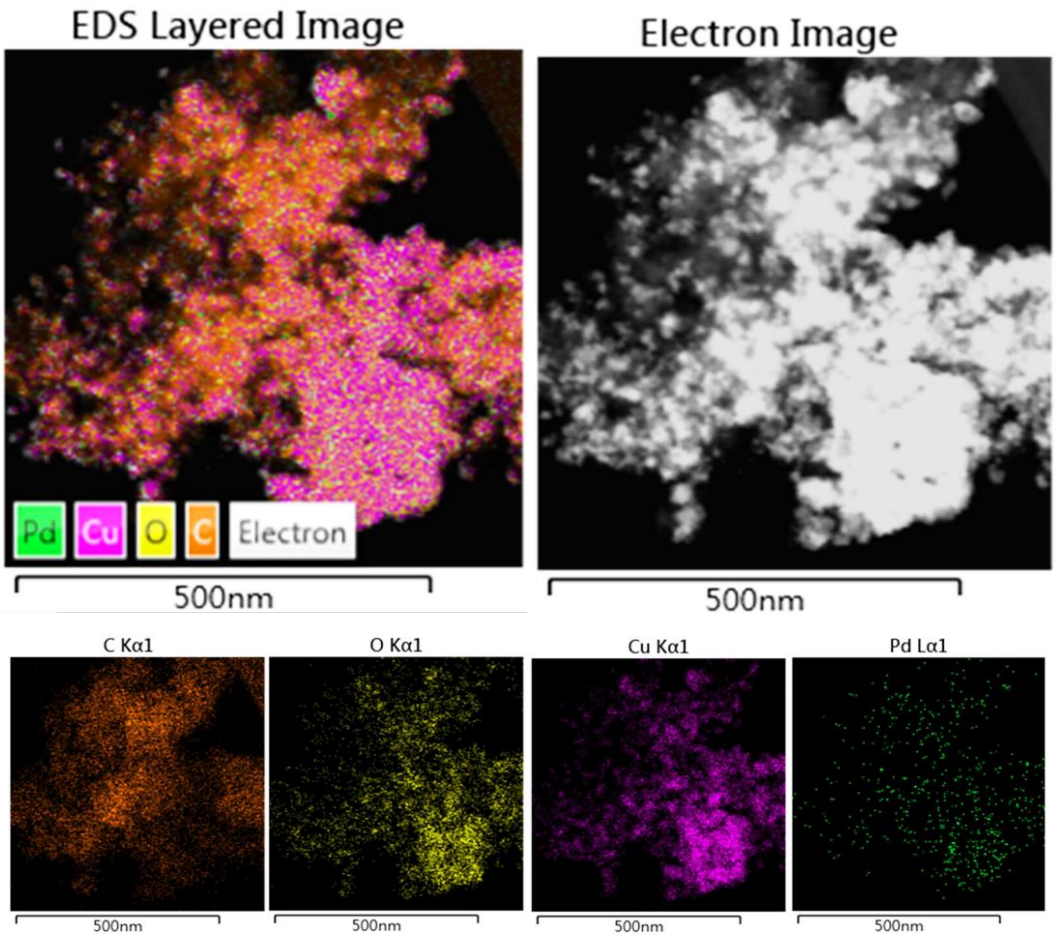

Figure S2. EDS mapping images of Cu@$Pd_{1.0}$/C-320.

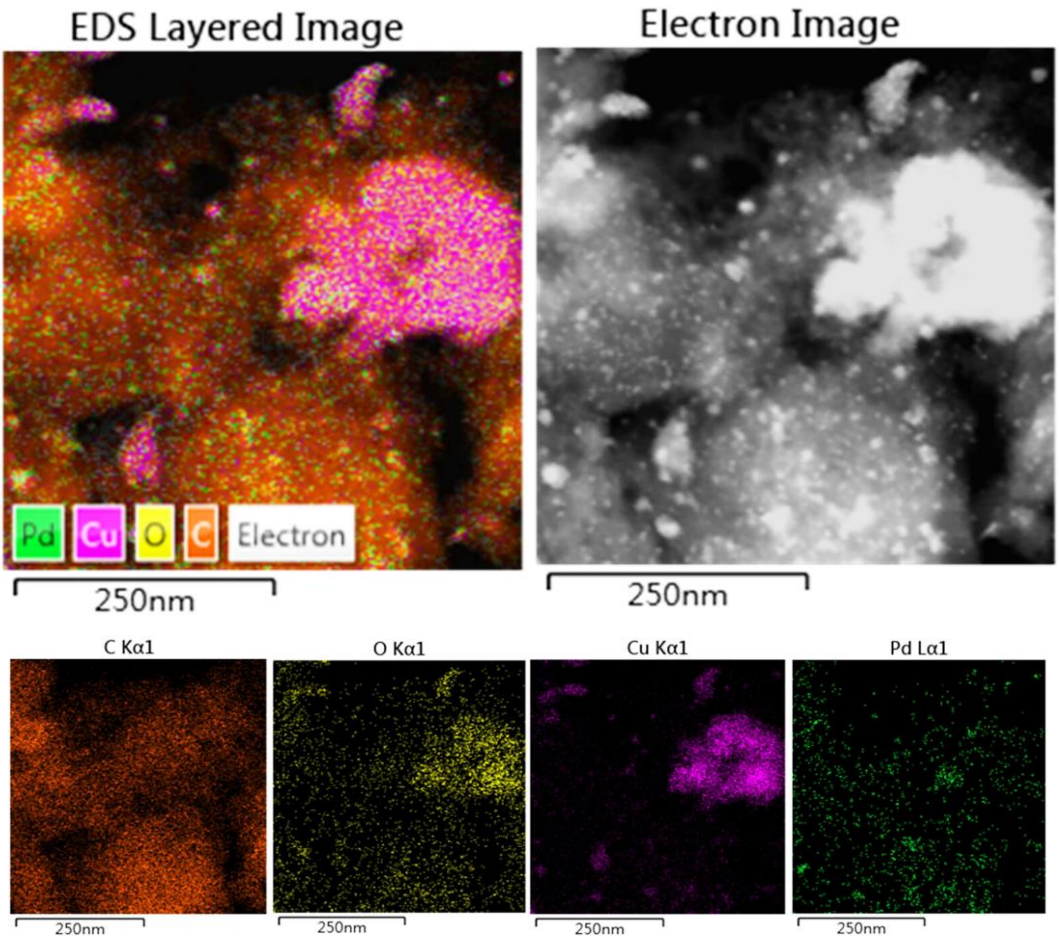

Figure S3. EDS mapping images of Cu@$Pd_{2.0}$/C-320.

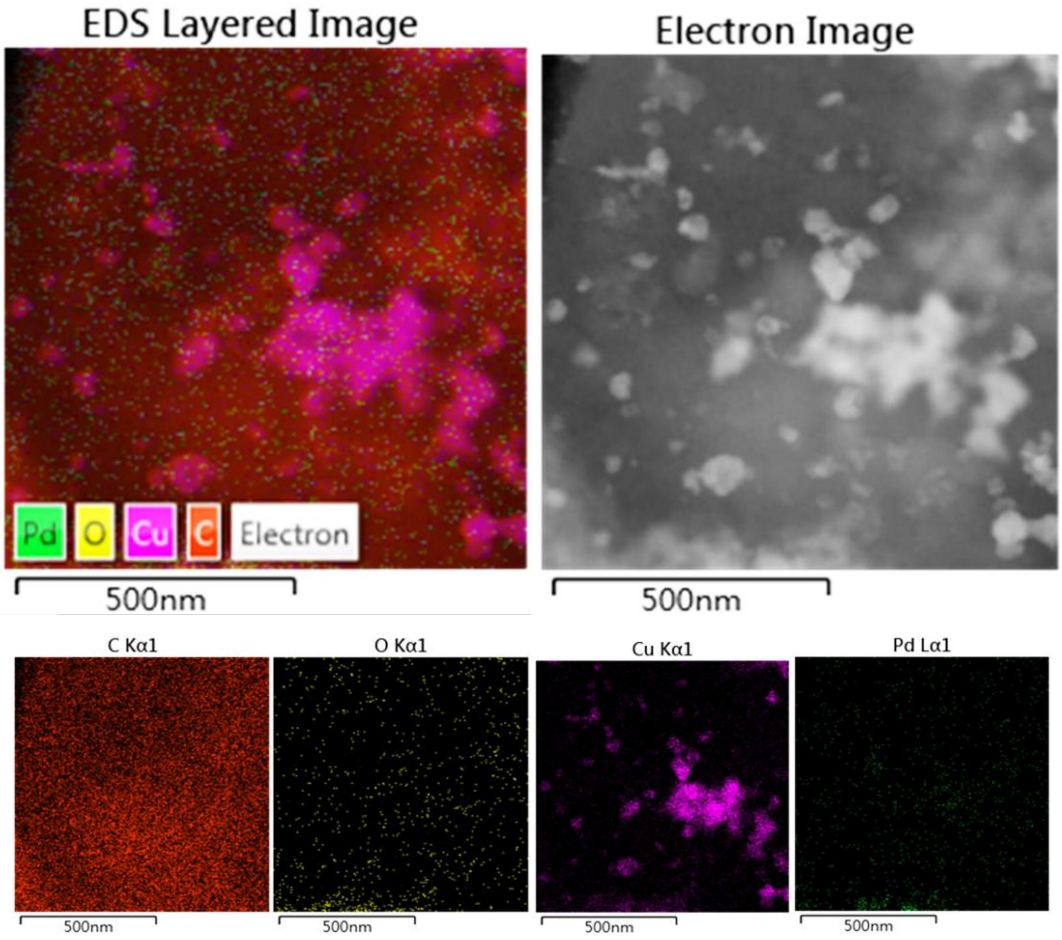

Figure S4. EDS mapping images of Cu@$Pd_{0.5}$/C-320-R.

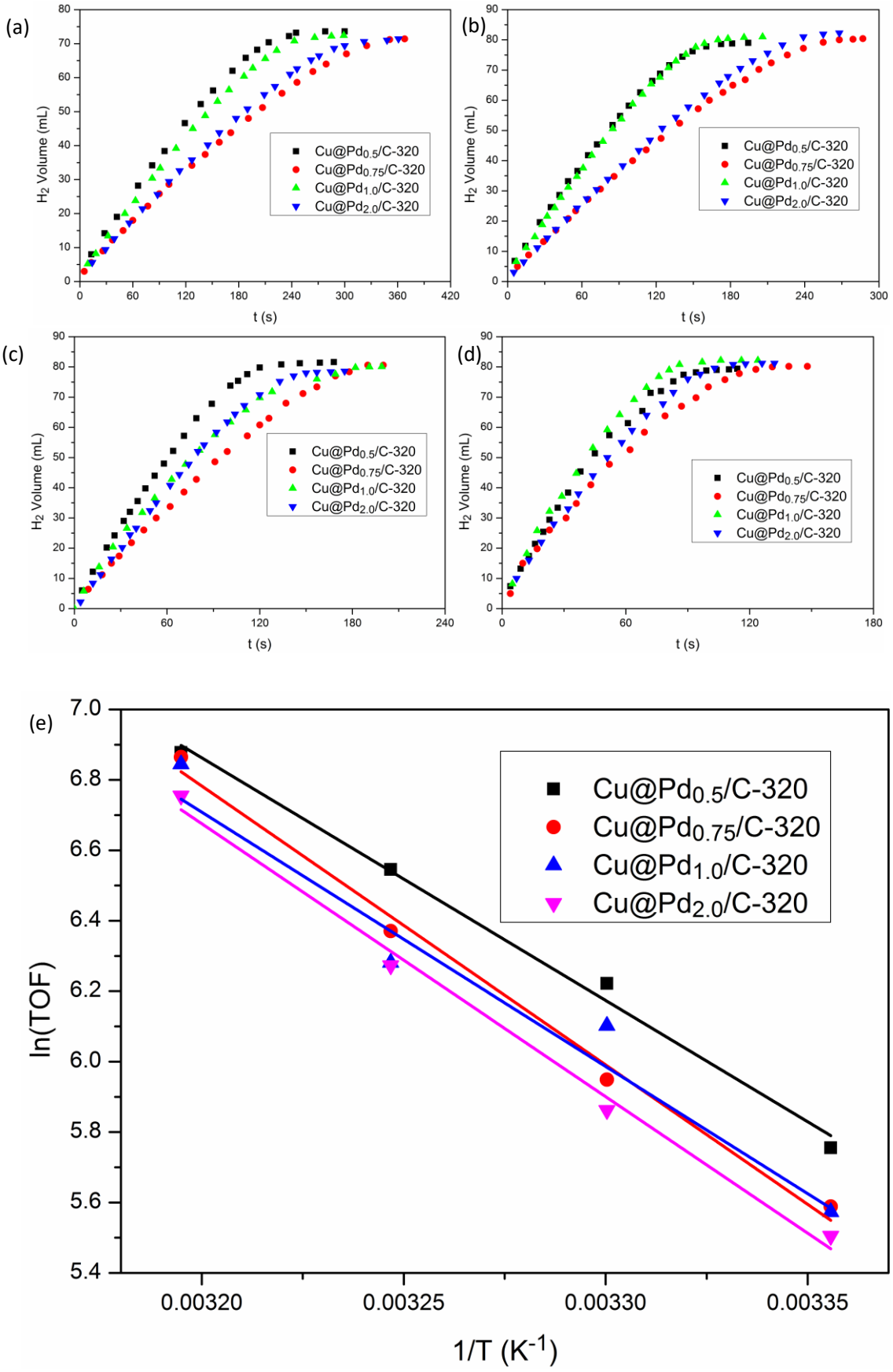

Figure S5. Plots of hydrogen evolution from ammonia borane vs time on Cu@Pd/C-320 at 298 K (a), 303 K (b), 308 K (c), 313 K (d) and the corresponding Arrhenius plot (e).

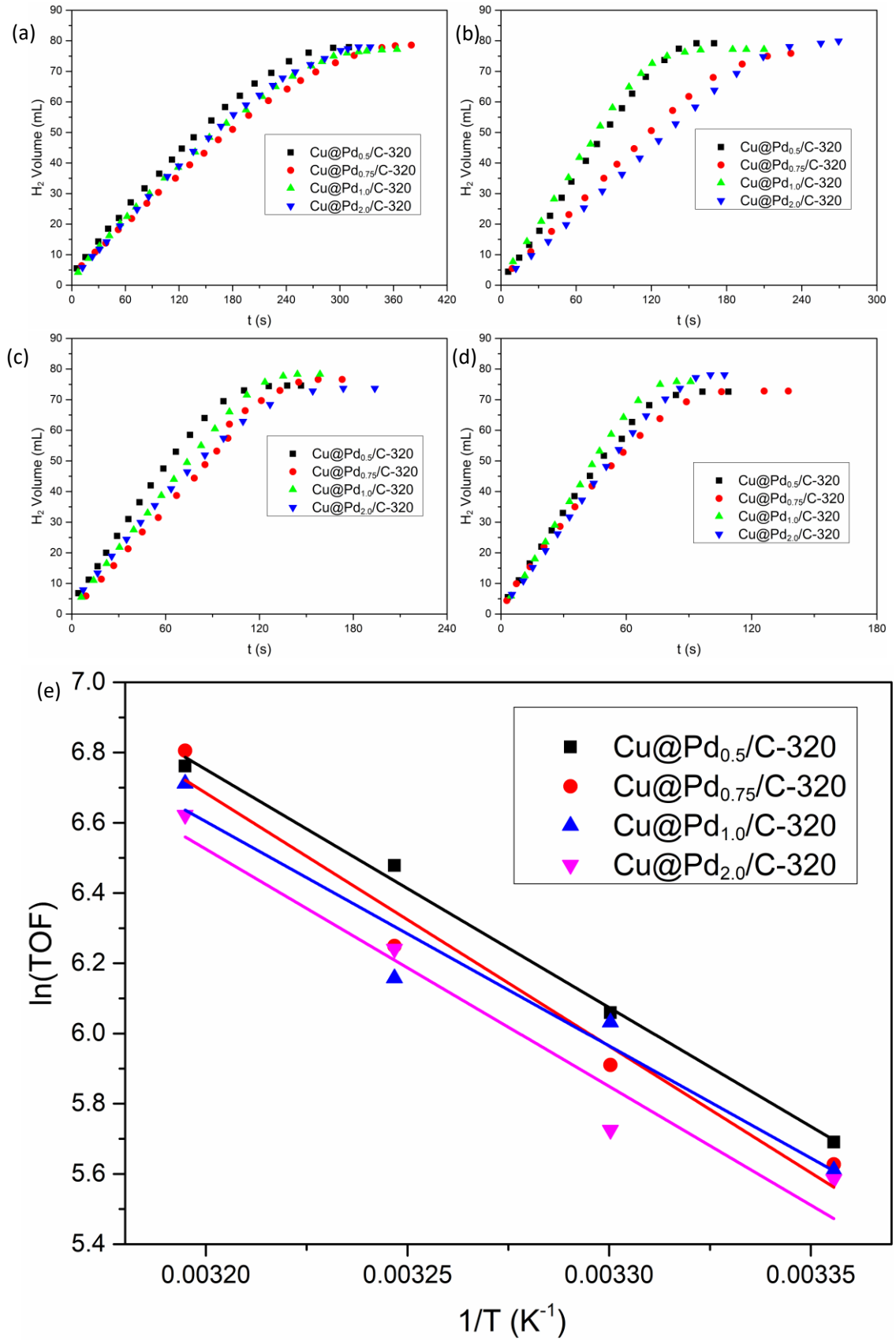

Figure S6. Plots of hydrogen evolution from ammonia borane vs time on Cu@Pd/C-320 at 298 K (a), 303 K (b), 308 K (c), 313 K (d) and the corresponding Arrhenius plot (e).

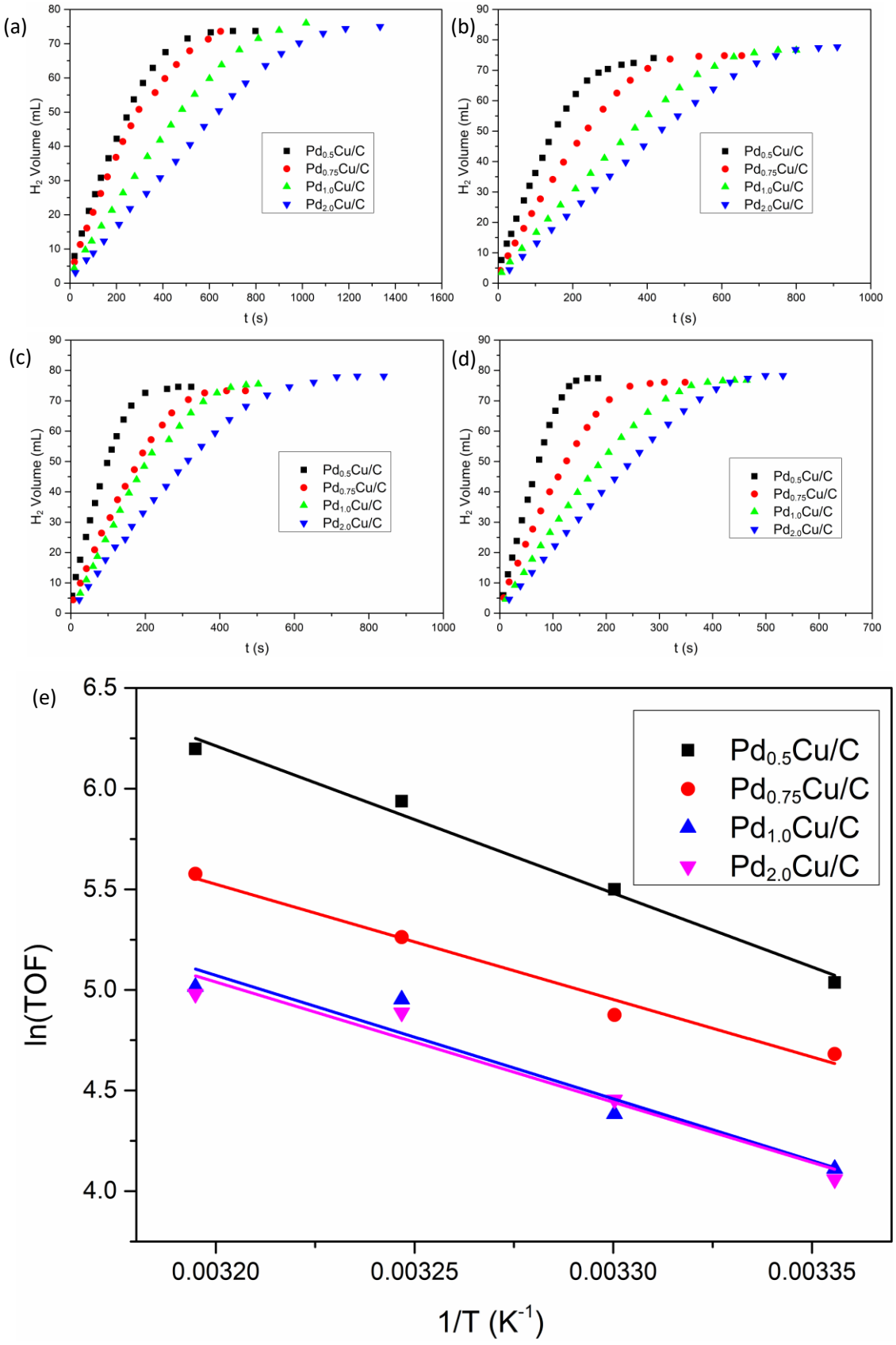

Figure S7. Plots of hydrogen evolution from ammonia borane vs time on PdCu/C at 298 K (a), 303 K (b), 308 K (c), 313 K (d) and the corresponding Arrhenius plot (e).

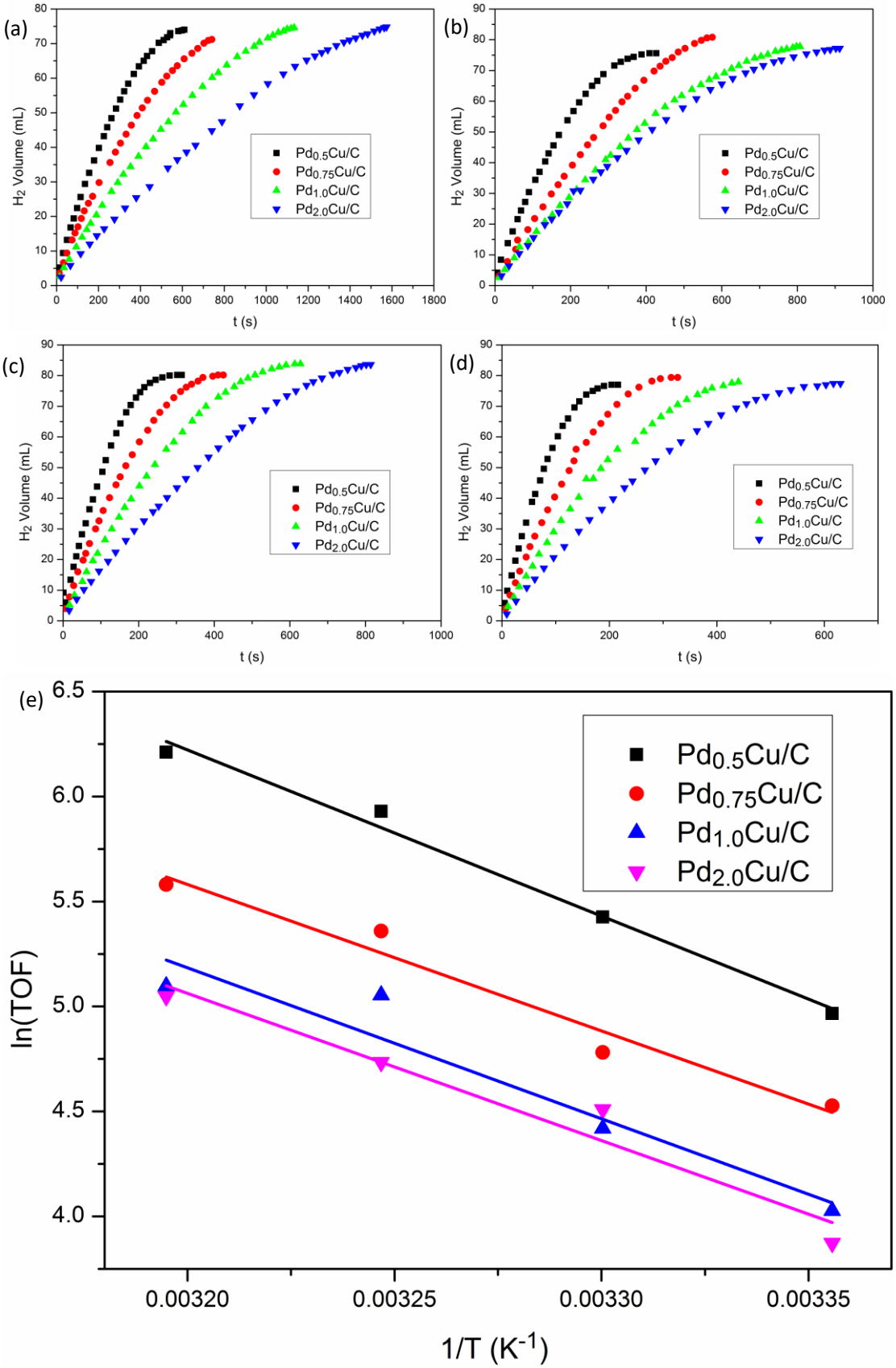

Figure S8. Plots of hydrogen evolution from ammonia borane vs time on PdCu/C at 298 K (a), 303 K (b), 308 K (c), 313 K (d) and the corresponding Arrhenius plot (e).

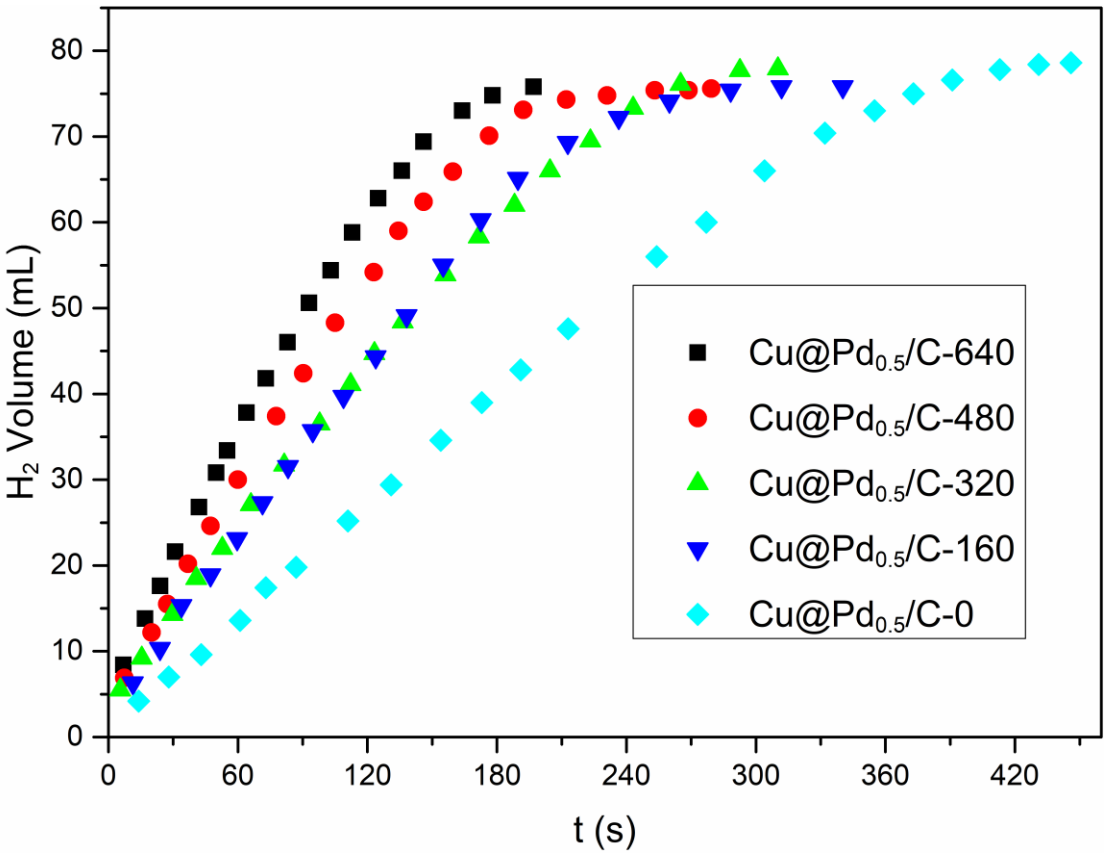

Figure S9. Plots of hydrogen evolution from ammonia borane vs time over Cu@Pd/C prepared from Cu/C with different oxidation degree.

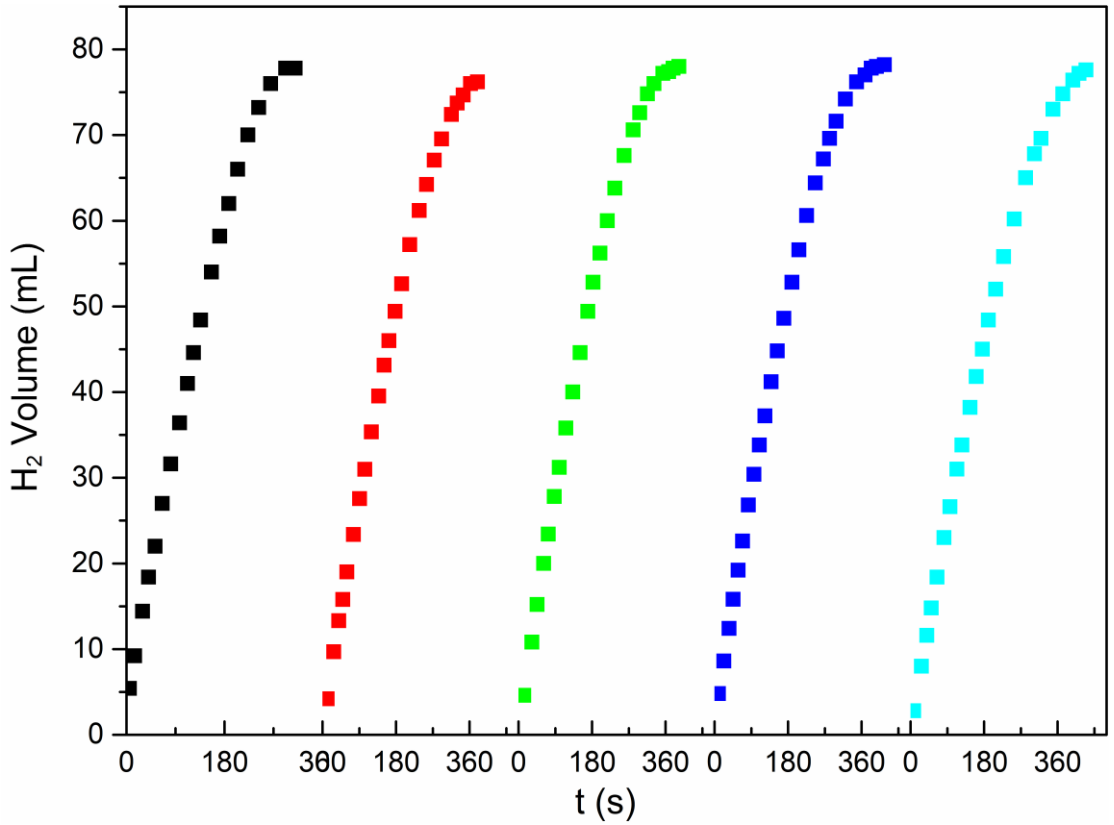

Figure S10. The stability test of Cu@Pd0.5/-320.

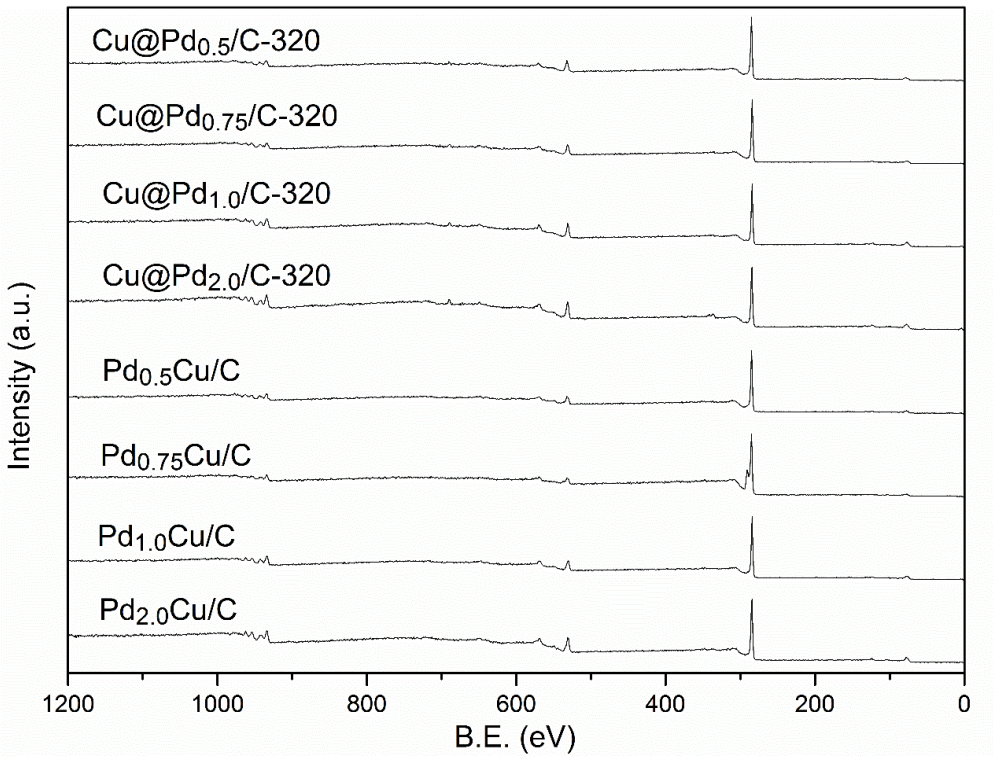

Figure S11. Survey XPS spectra of PdCu/C and Cu@Pd/C.

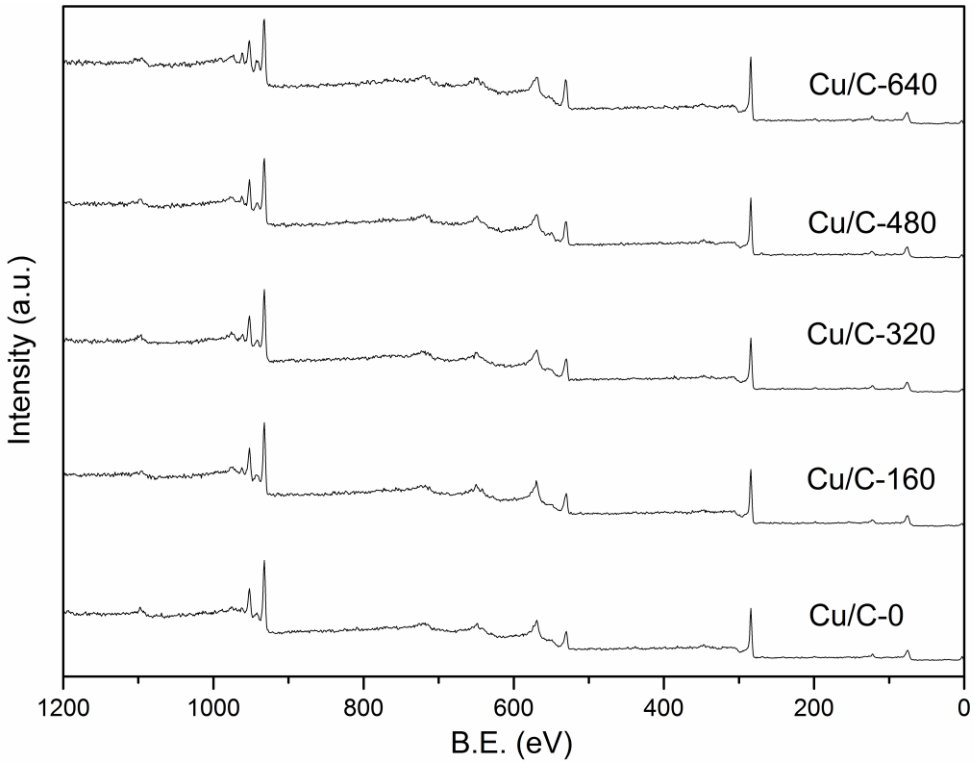

Figure S12. Survey XPS spectra of Cu/C.

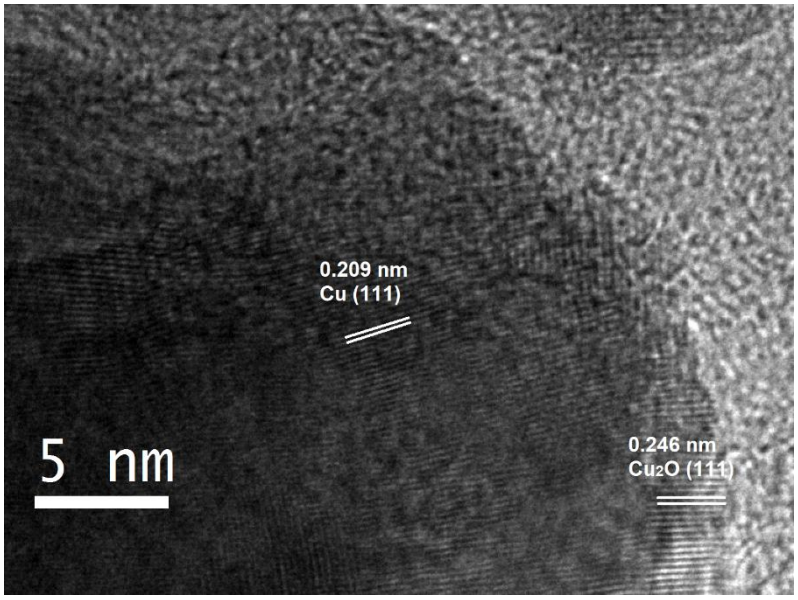

Figure S13. The HRTEM image of Cu@$Pd_{0.5}$/C-320-R.

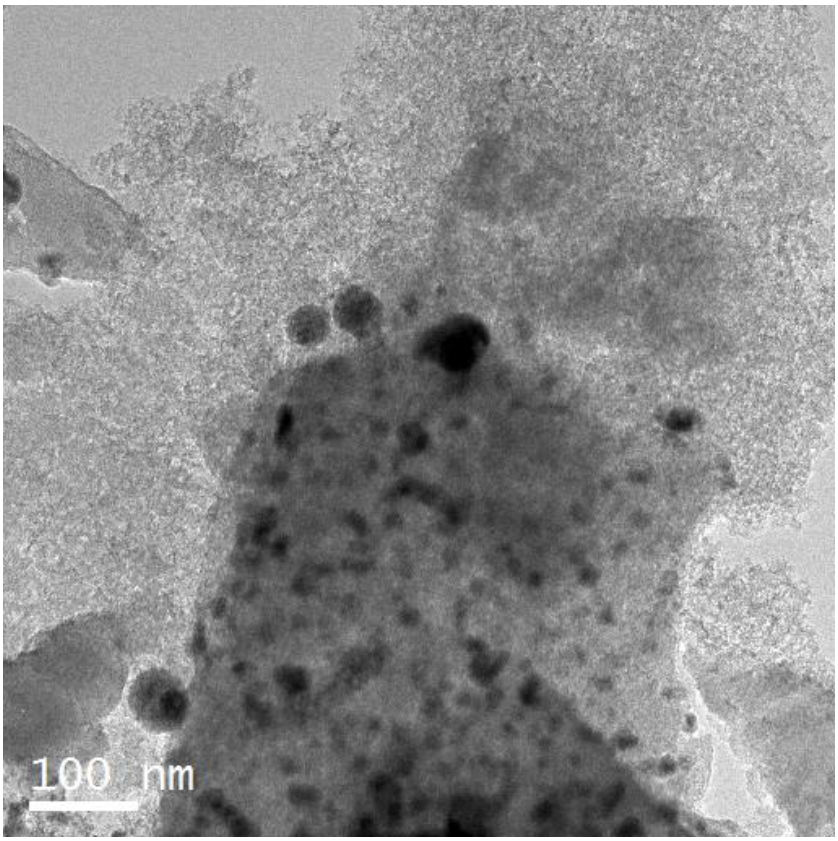

Figure S14. TEM image of Cu@$Pd_{0.5}$/C-320-R.

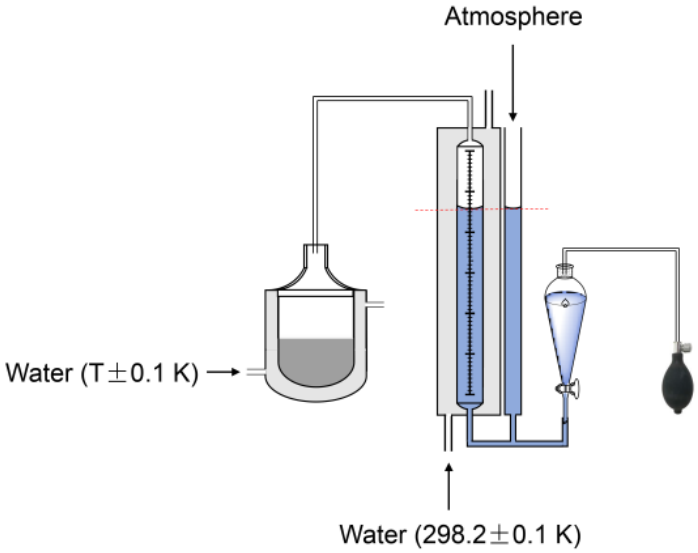

Figure S15. The schematic diagram of apparatus for catalytic hydrolysis of AB.

Table S1 The content of Pd and Cu in the sample determined by ICP-OES.

Catalysts	Content of Pd (wt%)	Content of Cu (wt%)
Cu@$Pd_{0.5}$/C-0	0.366	6.852
Cu@$Pd_{0.5}$/C-160	0.372	5.760
Cu@$Pd_{0.5}$/C-320	0.376	6.153
Cu@$Pd_{0.5}$/C-480	0.391	6.763
Cu@$Pd_{0.5}$/C-640	0.393	6.404
Cu@$Pd_{0.75}$/C-320	0.557	5.561
Cu@$Pd_{1.0}$/C-320	0.905	5.582
Cu@$Pd_{2.0}$/C-320	1.744	5.256
$Pd_{0.5}$Cu/C	0.431	5.217
$Pd_{0.75}$Cu/C	0.653	6.353
$Pd_{1.0}$Cu/C	1.062	5.805
$Pd_{2.0}$Cu/C	1.910	5.418
Cu@$Pd_{0.5}$/C-320-R	0.341	4.705