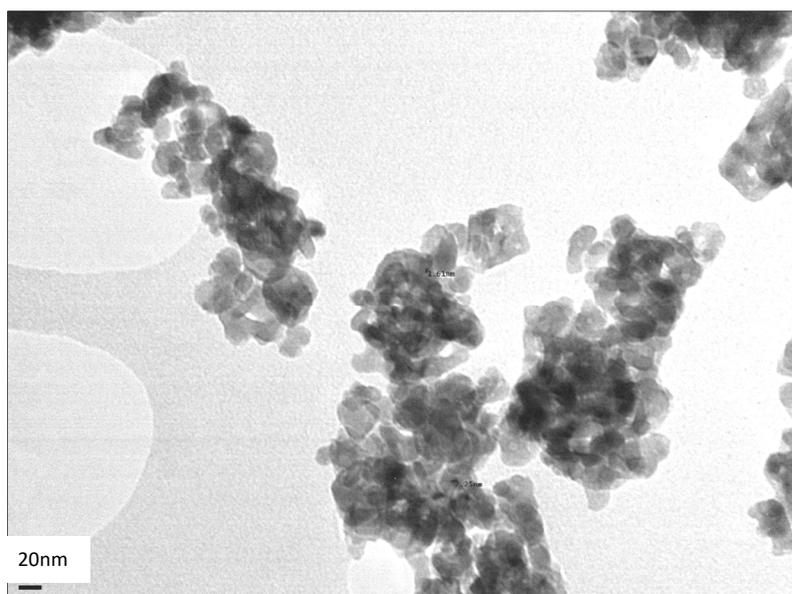
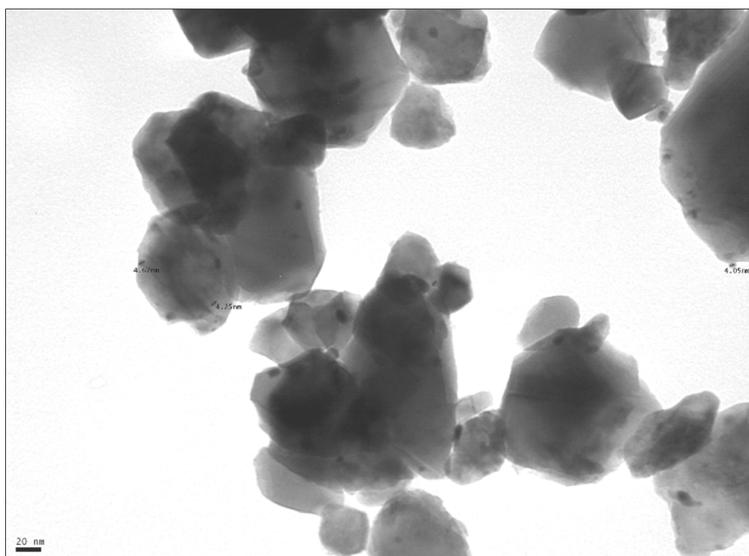


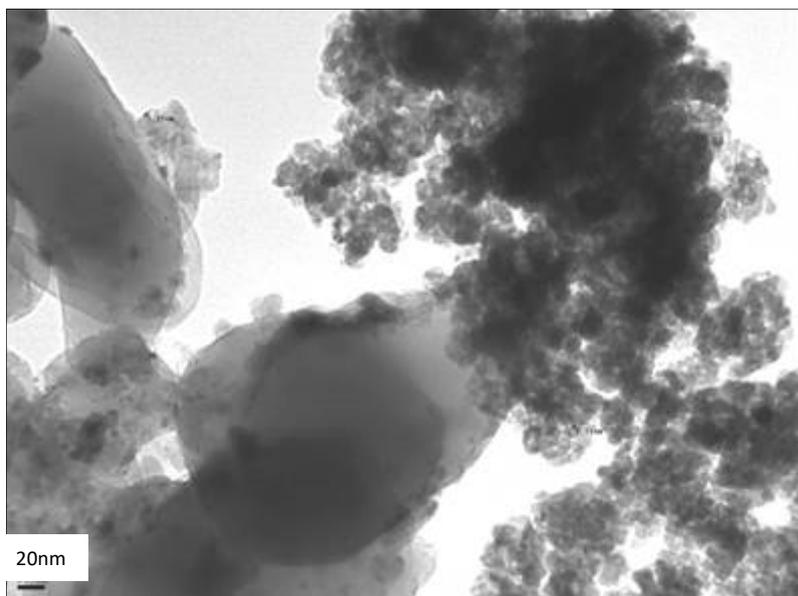
**Figure S1.** TEM micrograph of AuZ catalyst



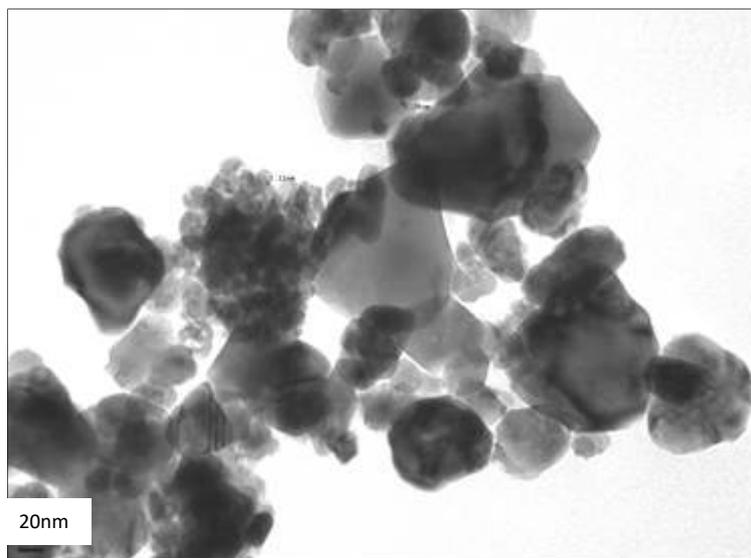
**Figure S2.** TEM micrograph of AuZt catalyst



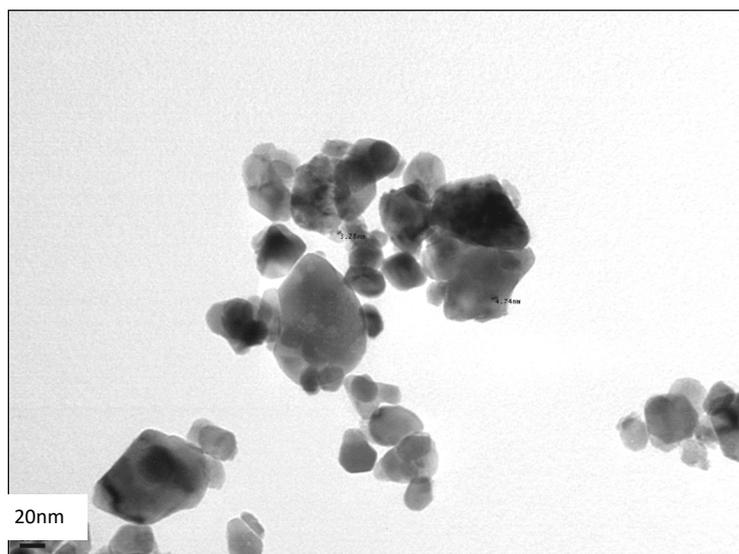
**Figure S3.** TEM micrograph of AuDPZ catalyst



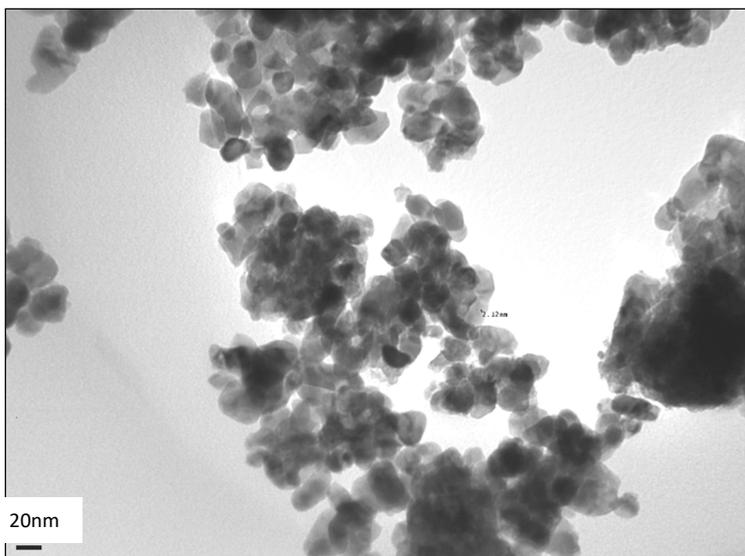
**Figure S4.** TEM micrograph of AuDPZt catalyst



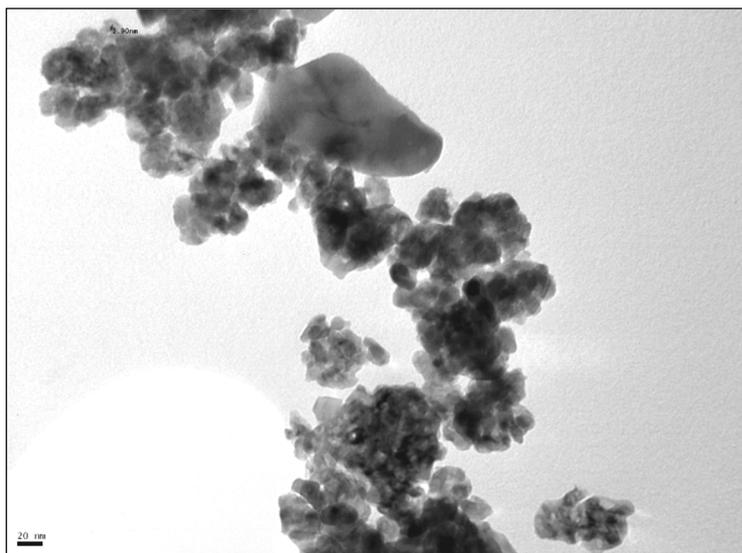
**Figure S5.** TEM micrograph of AuCoZ catalyst



**Figure S6.** TEM micrograph of AuDPCoZ catalyst

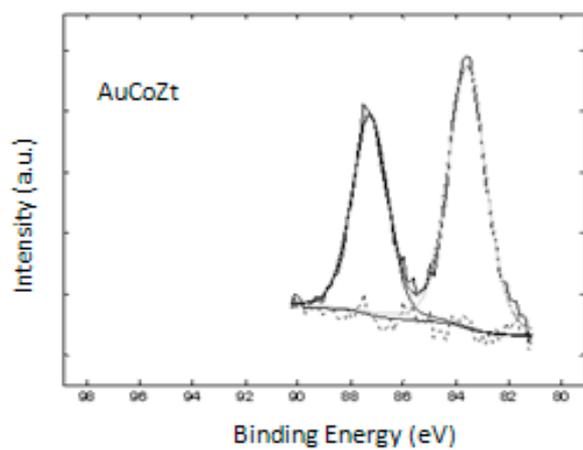
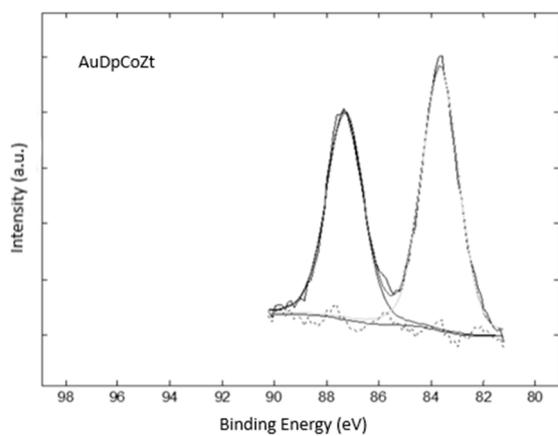


**Figure S7.** TEM micrograph of AuCoZt catalyst



**Figure S8.** TEM micrograph of AuDPCoZt catalyst

**Figure S 9** XPS Au 4f spectra and deconvolution of gold-containing catalysts



**Table S10.** XPS results. Au/Co and Au/Z atomic ratios of fresh and post-reaction catalysts.

		<b>AuCoZ</b>		<b>AuCoZt</b>	
		<b>Au/Co</b>	<b>Au/Z</b>	<b>Au/Co</b>	<b>Au/Z</b>
	<b>Fresh</b>	0.0175	0.0247	0.0173	0.0225
<b>Post-reaction</b>	<b>Naphthalene</b>	0.0156	0.0219	0.0298	0.0237
	<b>Propane</b>	0.0234	0.0198	0.0232	0.0563
		<b>AuDPCoZ</b>		<b>AuDPCoZt</b>	
	<b>Fresh</b>	0.0205	0.0547	0.0320	0.0613
<b>Post-reaction</b>	<b>Naphthalene</b>	0.0199	0.0496	0.0335	0.0606
	<b>Propane</b>	0.0232	0.0563	0.0349	0.0664