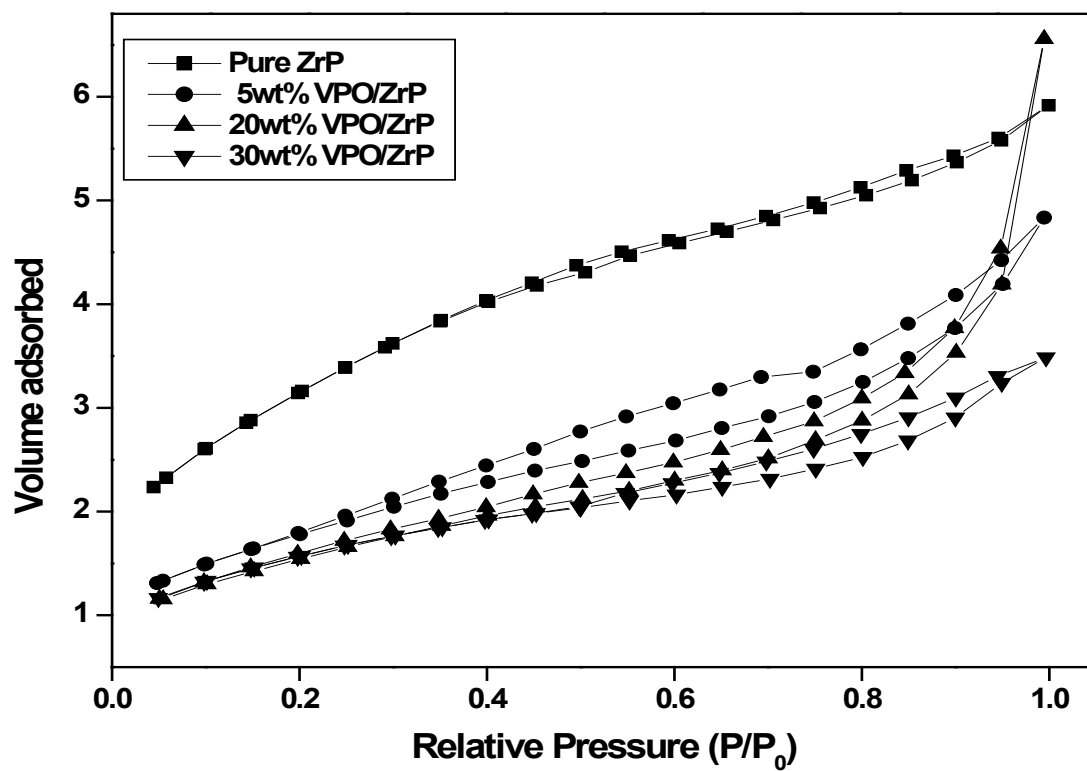


Figure S-1 N<sub>2</sub> adsorption-desorption isotherm of pure ZrP and different wt% loadings of VPO



**Figure S-2 TGA analysis of calcined and uncalcined VPO catalyst**

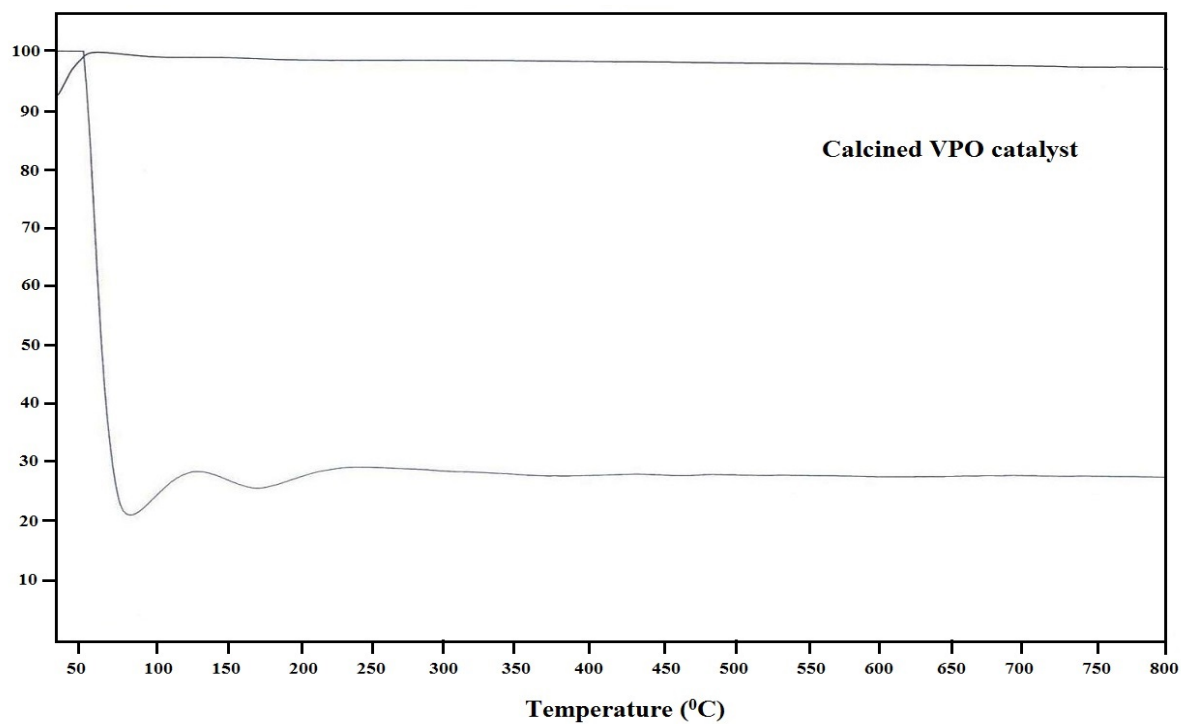
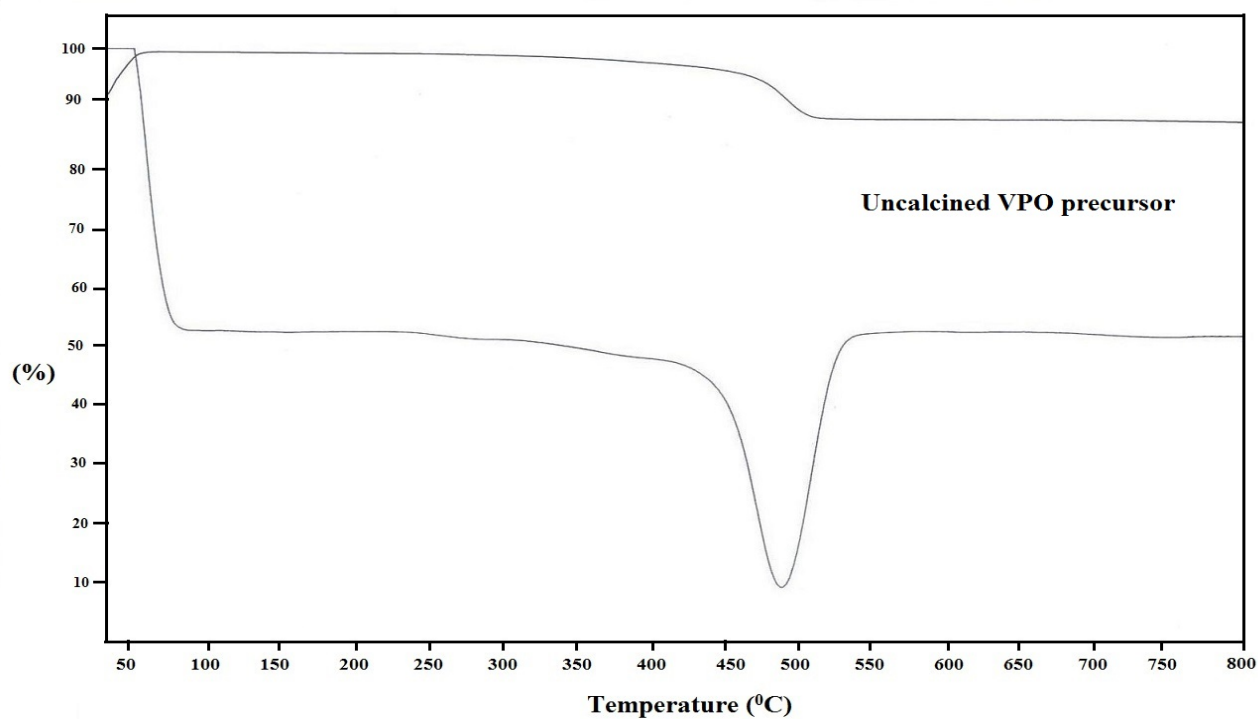


Figure S-3 Pore size analysis:

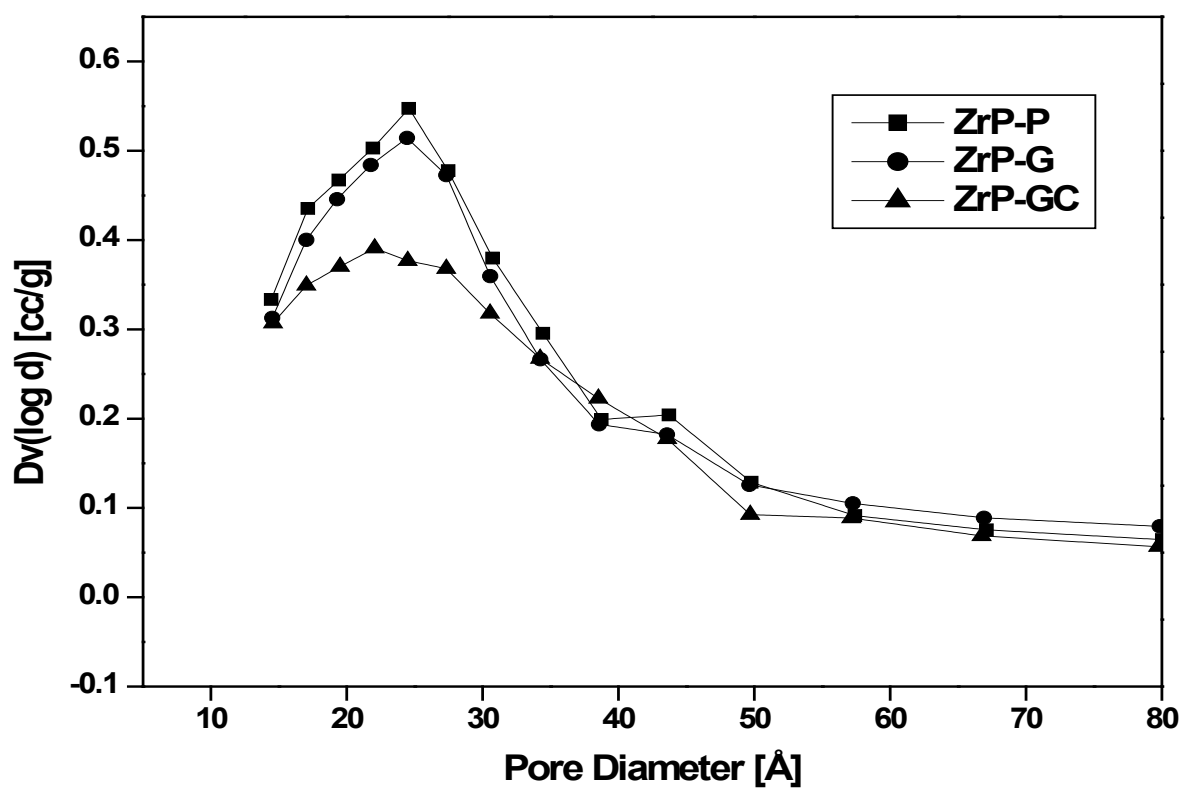


Figure S-3 Pore size analysis of pure zirconium phosphate (ZrP-P), ZrP after grinding for 15 min (ZrP-G), ZrP after grinding for 15 min and calcined at 550 °C (ZrP-GC)

S.No	Catalyst	Surface area (m <sup>2</sup> /g)	Pore volume	Pore diameter (Å)
1.	Pure ZrP	334	0.36	32
2.	Pure ZrP-G	336	0.36	32
3.	Pure ZrP-CG	271	0.32	32