Supporting Information

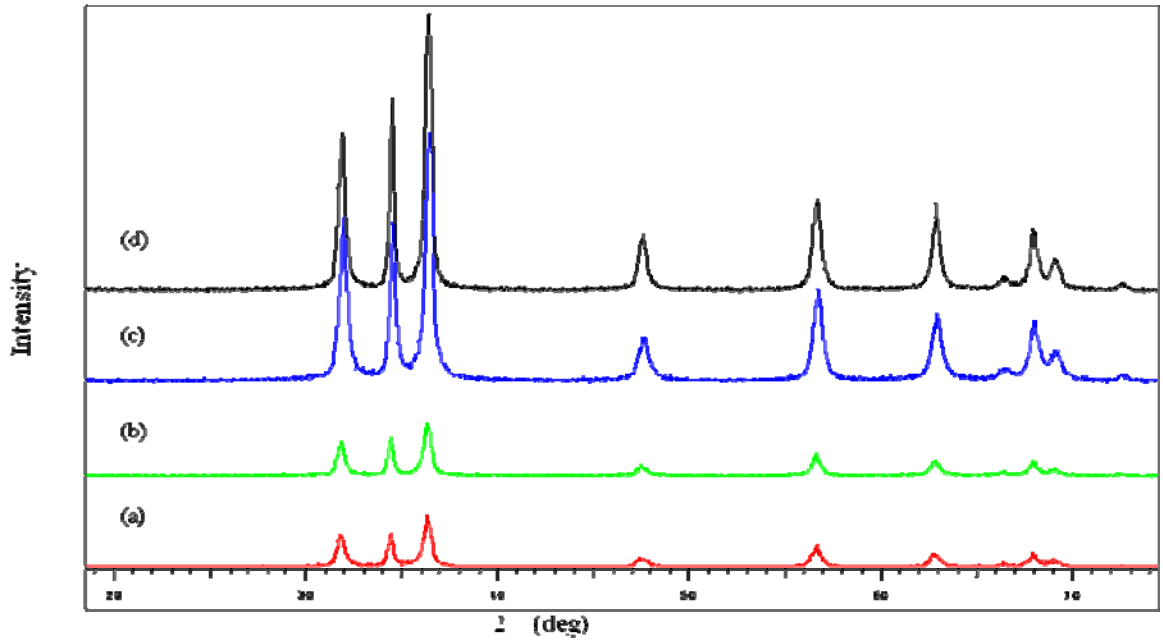

Figure S1. XRD data of the reaction products prepared at 70°C using different feeding methods. (a) NaOH solution added to $ZnSO_4$ solution in a single addition. (b) NaOH solution added to $ZnSO_4$ solution in a dropwise manner. (c) $ZnSO_4$ solution added to NaOH solution in a single shot. (d) $ZnSO_4$ solution added to NaOH solution in a dropwise manner.

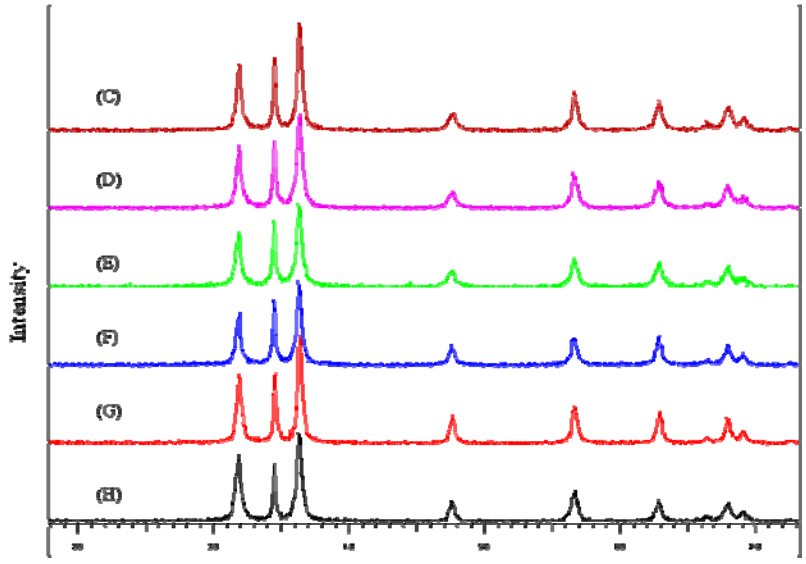

Figure S2. XRD on the products of reactions (C) to (H) shows patterns which conform with zinc oxide.

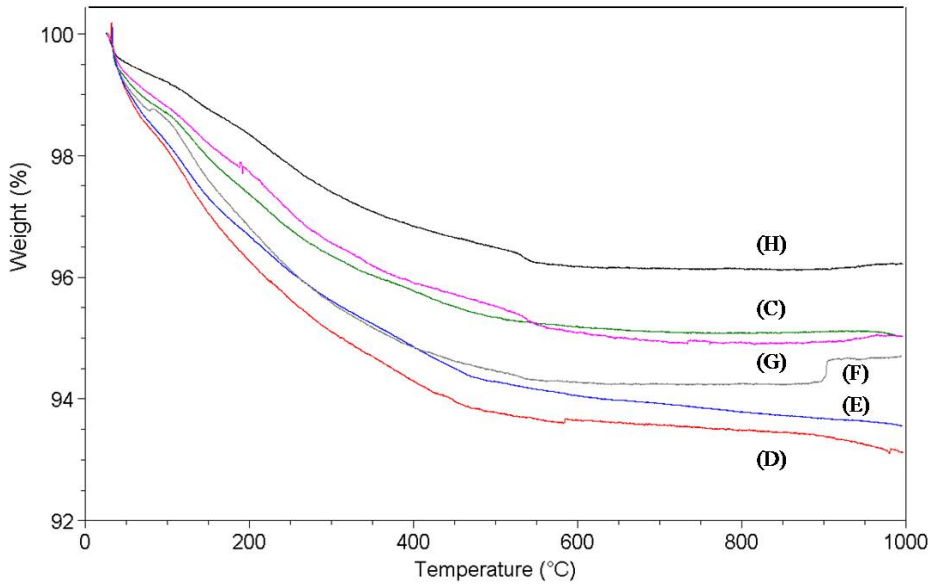

Figure S3. Thermogravimetric analyses on the products of reactions (C) to (H) shows that no specific decomposition reaction occurred at ~120°C. Instead, mass loss up to the temperature of 120°C is attributed to moisture removal and the mass loss over 120°C is attributed to surface hydroxyl groups removal.

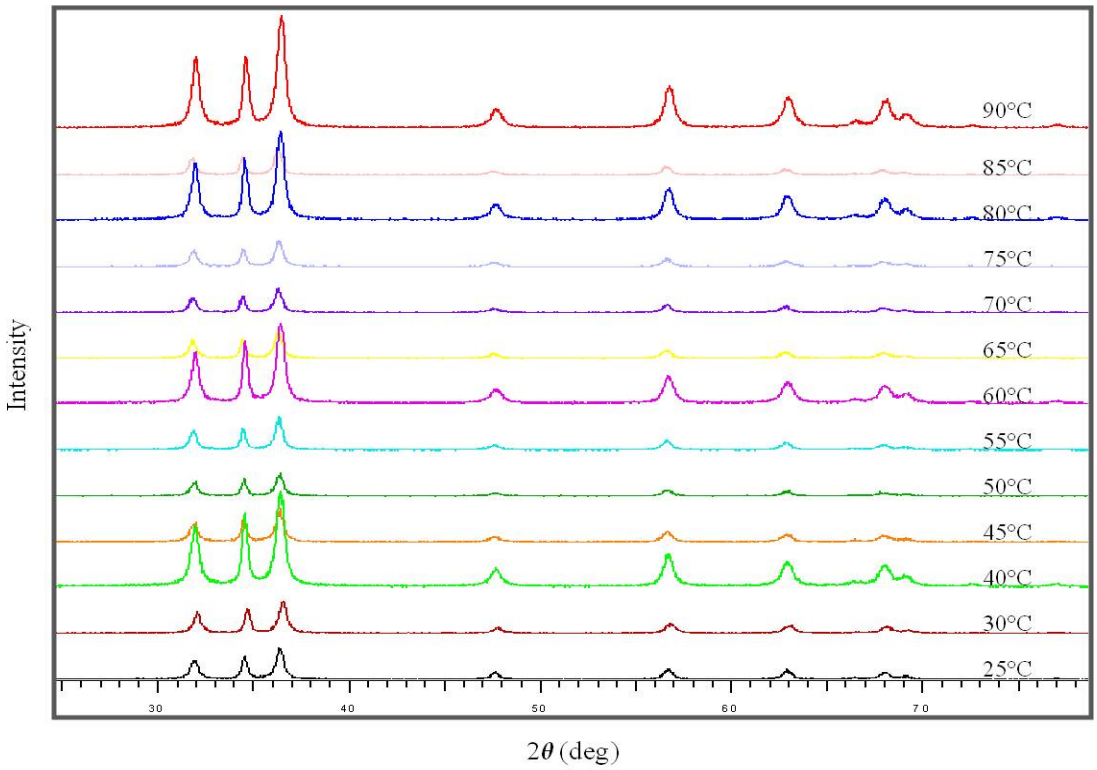

Figure S4. XRD shows ZnO hexagonal wurtzite structure for all the samples made at different temperatures from 25°C to 90°C.

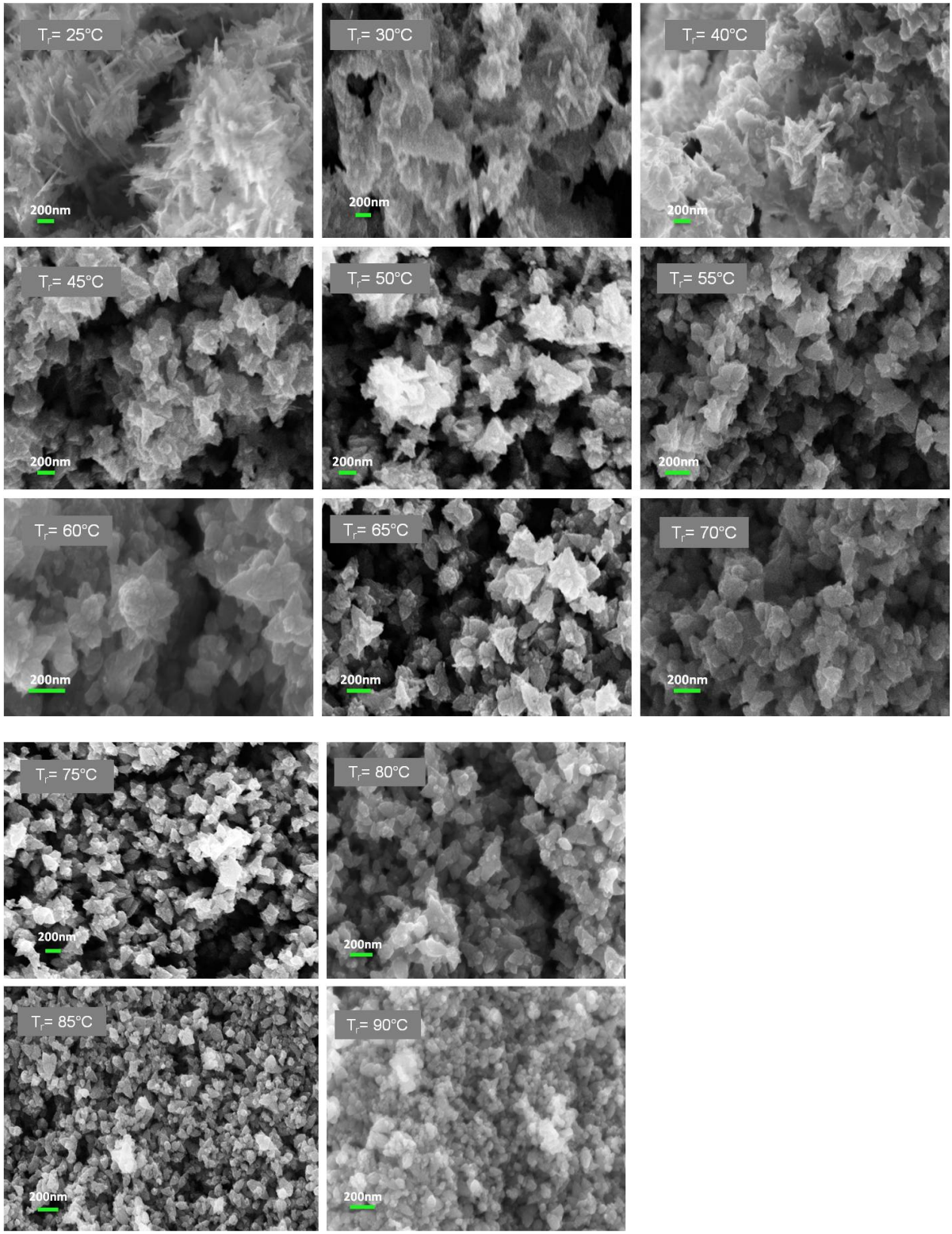

Figure S5. SEM images of ZnO particles synthesized at different temperatures.

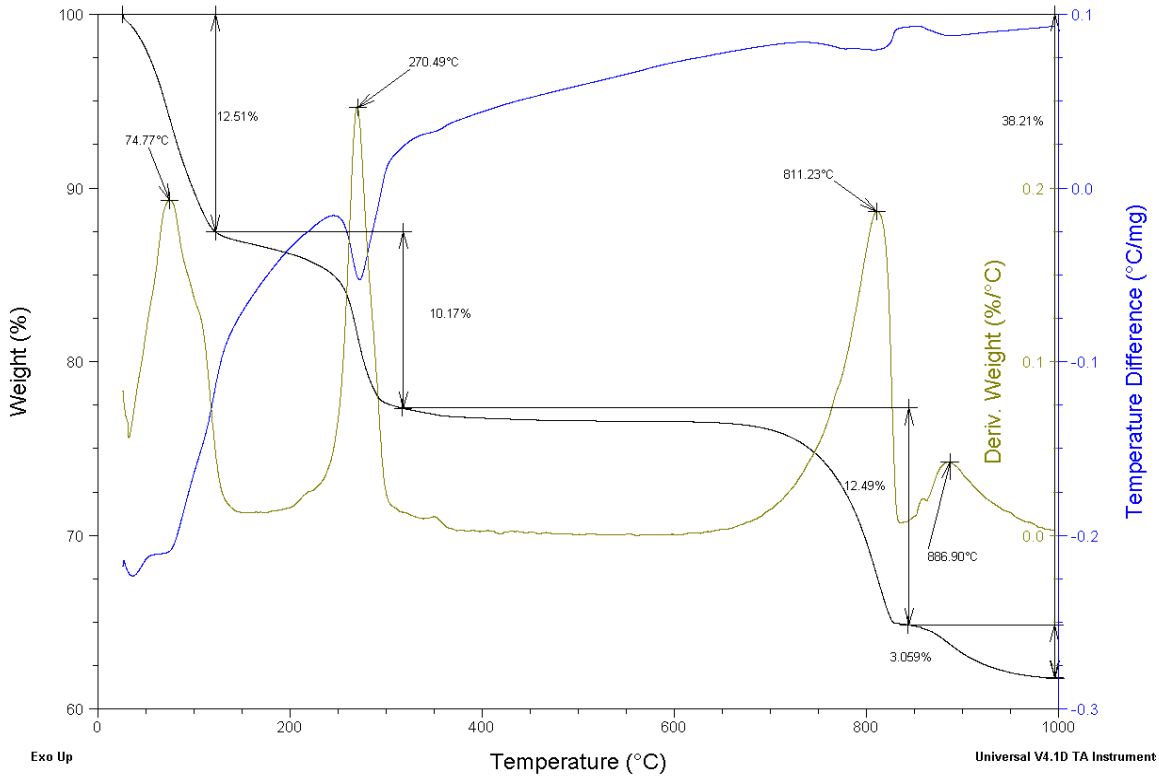

Figure S6. TGA data showing the effect of calcining zinc sulphate hydroxide hydrate ($Zn_4SO_4(OH)_6.4H_2O$). TGA revealed a mass loss of ~38% up to 1000 °C, which is consistent with the decomposition of $Zn_4SO_4(OH)_6.4H_2O$ to ZnO with the complete transformation to ZnO requiring a temperature of 900°C.