Supporting Materials

Incorporation of ZnO nanoparticles into soy protein-based bioplastics to improve their functional properties

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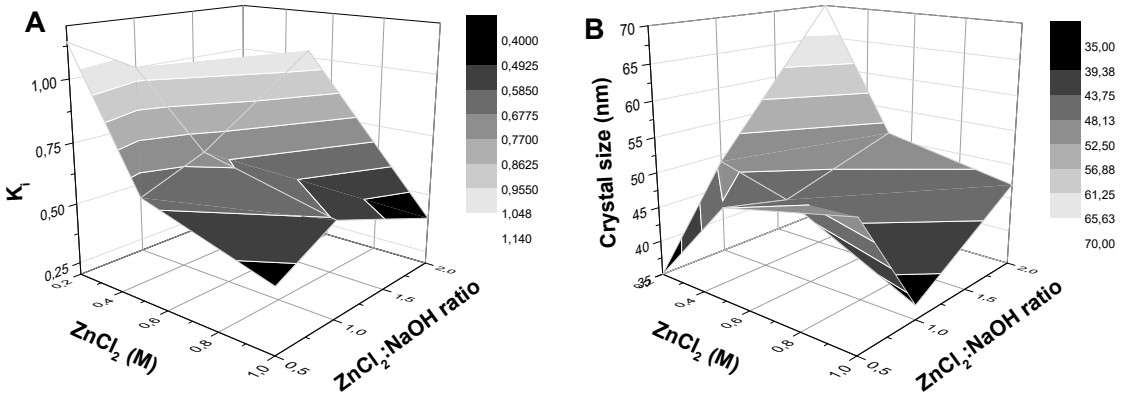

Figure S1. Yield (K_i, A) and crystal size (B) of nanoparticles processed at different $ZnCl_2$ concentrations (0.2, 0.5 and 1.0 M) and $ZnCl_2$:NaOH ratios (0.5, 1.0 and 2.0).

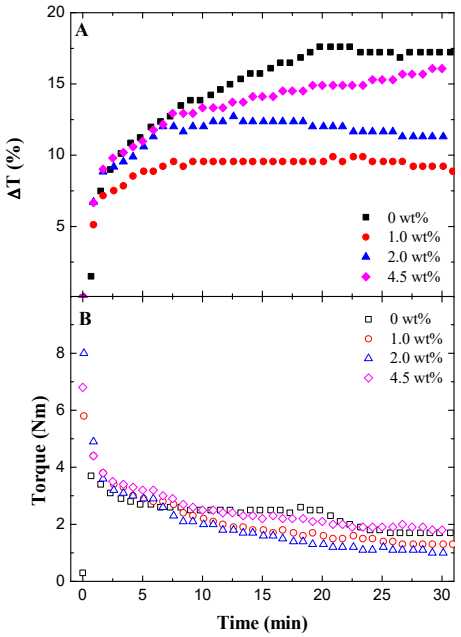

Figure S2. Temperature increment (A) and torque variation (B) of raw materials mixed at different nanoparticle concentrations (0, 1.0, 2.0 and 4.5 wt%).

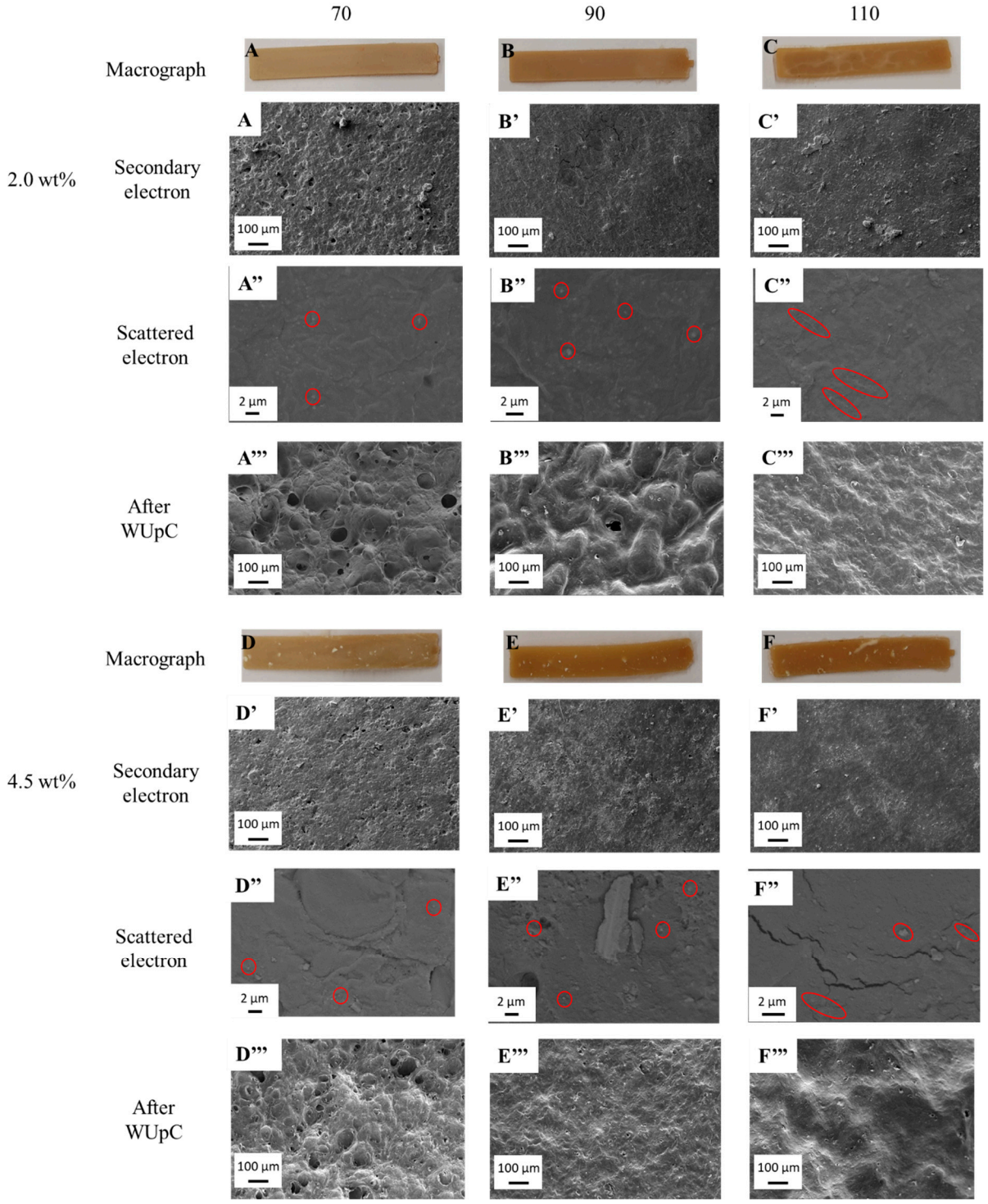

Figure S3. Macro and micrographs of bioplastics processed with 2.0 and 4.5 wt% of ZnO nanoparticles at different mould temperatures (70, 90 and 110 ^{0}C).

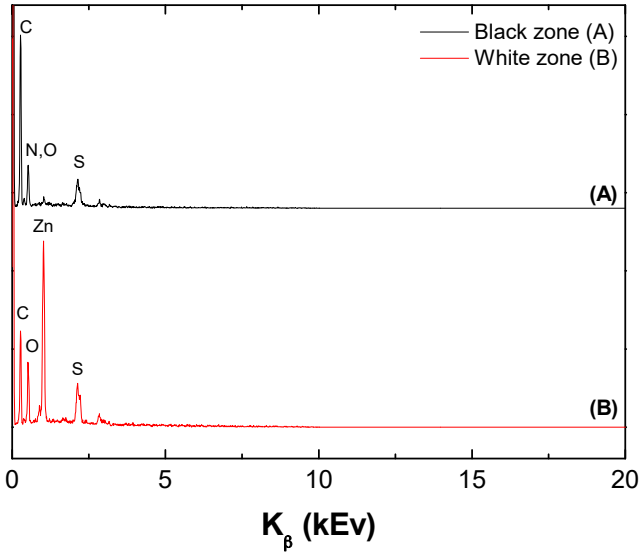

Figure S4. EDXA analyses of the different coloured zones (black and white zones) in a bioplastic matrix with nanoparticles incorporated.

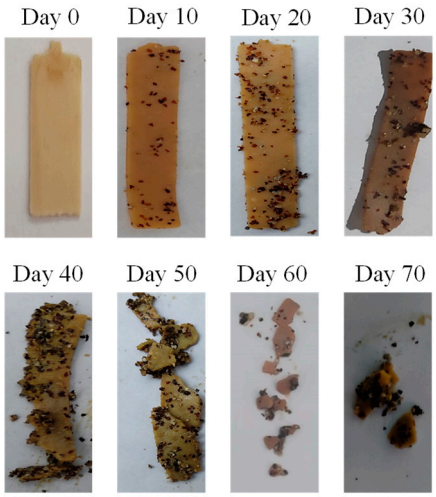

Figure S5. Biodegradability photographs of bioplastics with 1.0 wt% ZnO nanoparticles processed at 110 ^{0}C.