Supplementary Information (SI) for Sustainable Food Technology.

Supplementary material

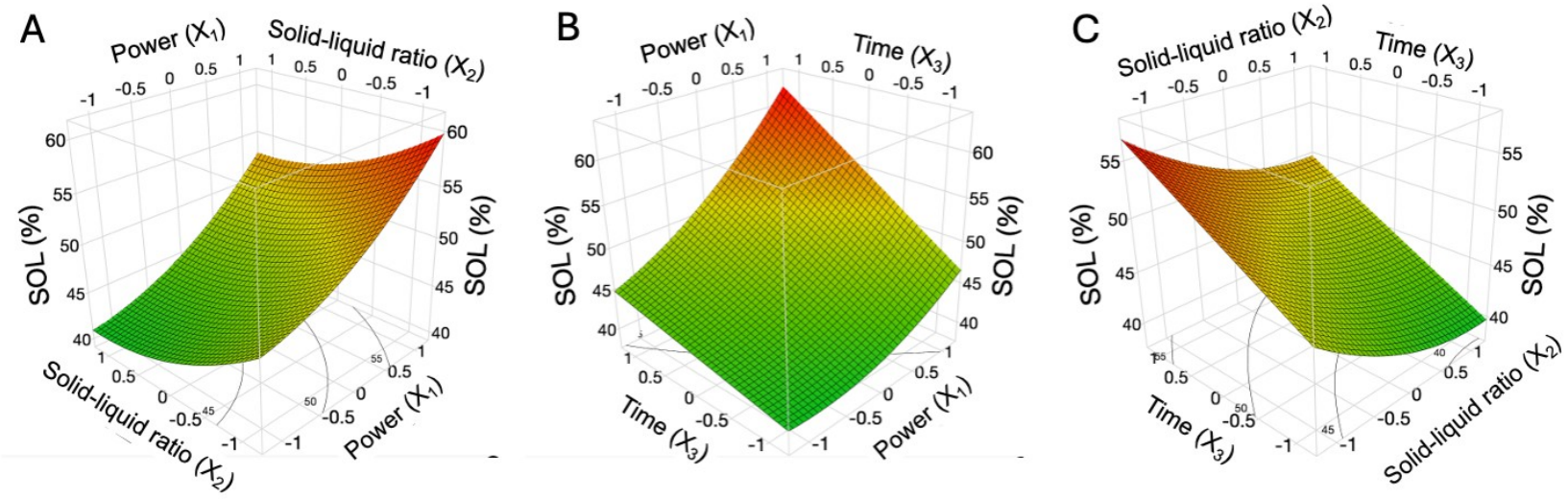

Figure I. Response surface methodology plots showing the effects of ultrasound treatment variables on solubility (SOL) of dietary fibre concentrates derived from orange peels. Interactions are illustrated between (A) power (X_1) and solid-liquid ratio (X_2), (B) power (X_1) and time (X_3), and (C) solid-liquid ratio (X_2) and time (X_3). Factor levels correspond to coded values of –1, 0, and 1, representing 80, 200, and 320 W; 1:30, 1:25, and 1:20 g/mL; and 10, 20, and 30 min, respectively.

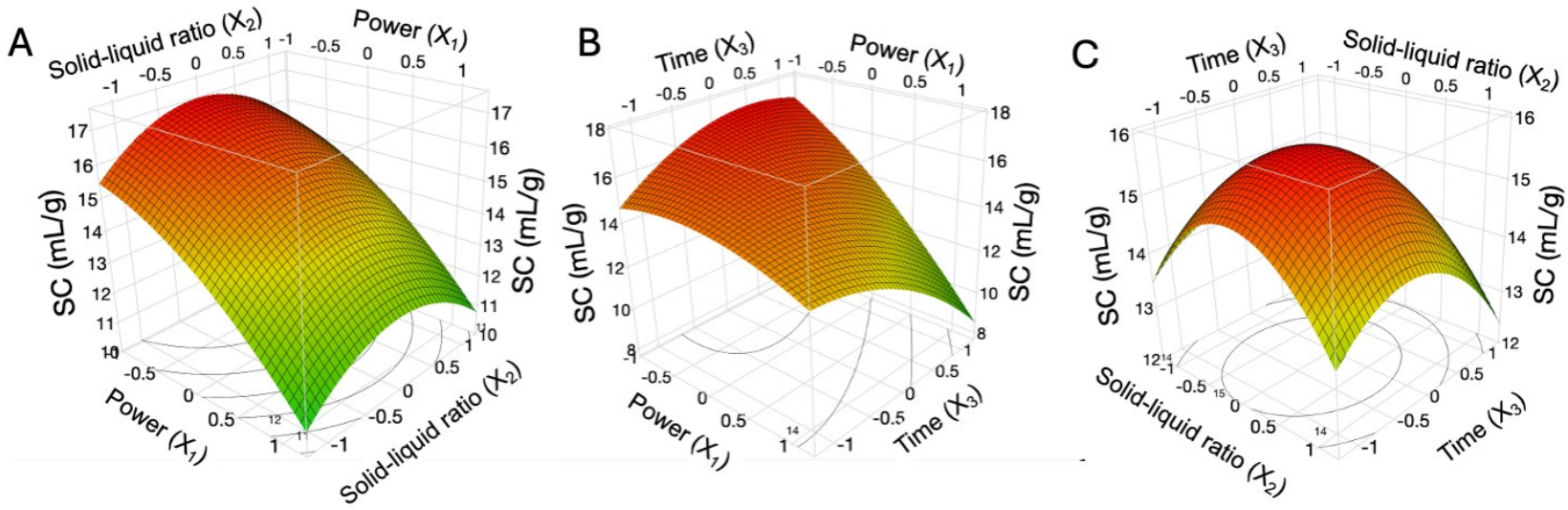

Figure II. Response surface methodology plots showing the effects of ultrasound treatment variables on swelling capacity (SC) of dietary fibre concentrates derived from orange peels. Interactions are illustrated between (A) power (X_1) and solid-liquid ratio (X_2), (B) power (X_1) and time (X_3), and (C) solid-liquid ratio (X_2) and time (X_3). Factor levels correspond to coded values of –1, 0, and 1, representing 80, 200, and 320 W; 1:30, 1:25, and 1:20 g/mL; and 10, 20, and 30 min, respectively.

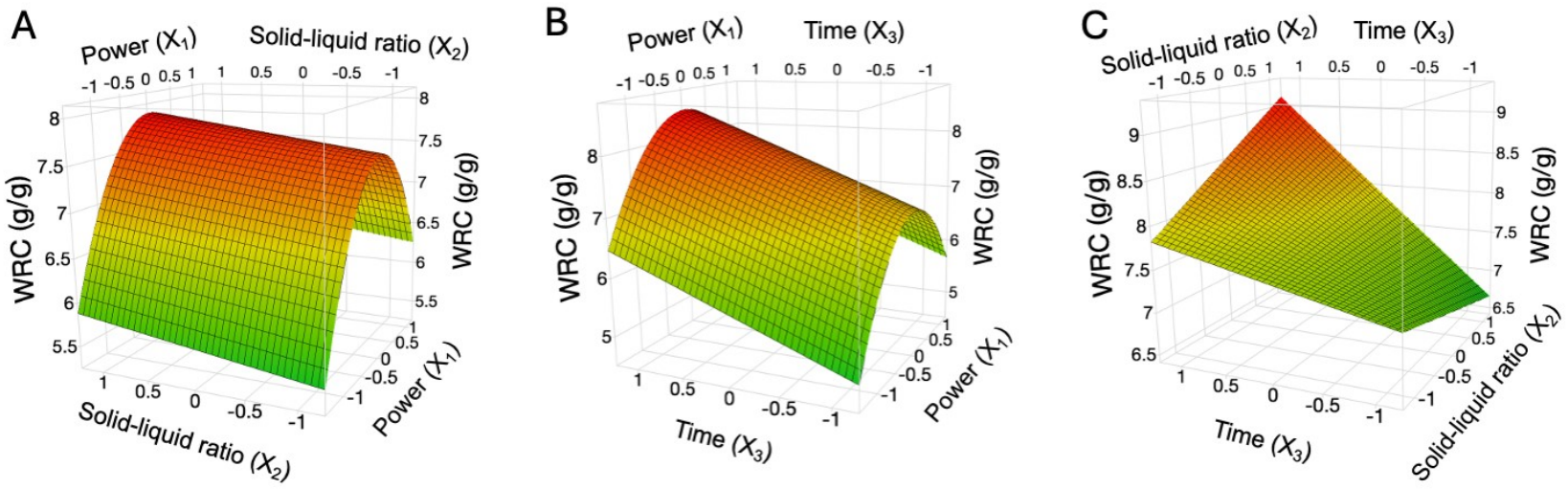

Figure III. Response surface methodology plots showing the effects of ultrasound treatment variables on water retention capacity (WRC) of dietary fibre concentrates derived from orange peels. Interactions are illustrated between (A) power (X_1) and solid-liquid ratio (X_2), (B) power (X_1) and time (X_3), and (C) solid-liquid ratio (X_2) and time (X_3). Factor levels correspond to coded values of –1, 0, and 1, representing 80, 200, and 320 W; 1:30, 1:25, and 1:20 g/mL; and 10, 20, and 30 min, respectively.

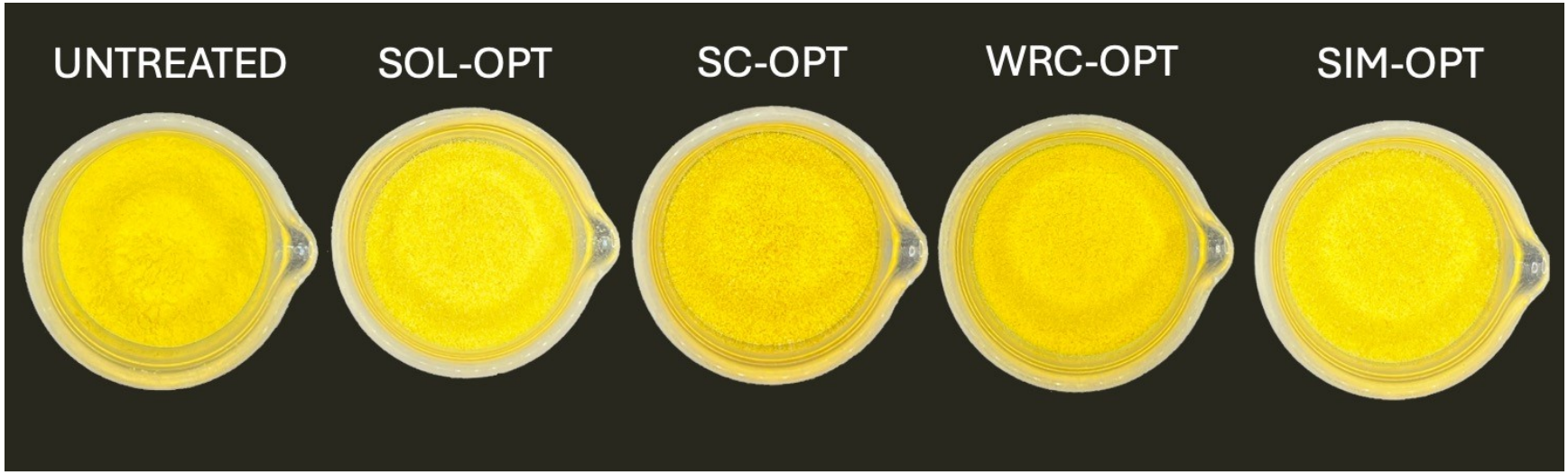

Figure IV. Dietary fibre concentrates derived from orange peels obtained after optimal ultrasound treatment conditions to maximise solubility (SOL-OPT), swelling capacity (SC-OPT), and water retention capacity (WRC-OPT), individually and simultaneously (SIM-OPT). SOL-OPT: 320 W, 1:30 SLR, 30 min; SC-OPT: 80 W, 1:25 SLR, 25.6 min; WRC-OPT: 208 W, 1:20 SLR, 30 min; SIM-OPT: 188 W, 1:28 SLR, 30 min.