Supporting Information (SI)

Propylene Carbonate and γ-Valerolactone as Green Solvents Enhance Sn(IV)-Catalysed Hydroxymethylfurfural (HMF) Production from Bread Waste

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Table S1. Distribution of products after $SnCl_4$-catalysed conversion of bread waste in PC/H_2O at 120^{o}C for 10 min.

Fraction	Product concentration (mg/ml)							
	Disaccharide	Glucose	Fructose	Levoglucosan	Formic acid	Levulinic acid	HMF	Furfural
Shaken mixture	0.28	8.18	5.26	0.42	1.32	2.64	6.84	0.94
Upper layer	0.30	9.06	5.80	0.44	1.36	2.66	6.45	0.91
Lower layer	0.28	7.50	4.84	0.42	1.36	2.70	7.23	0.97

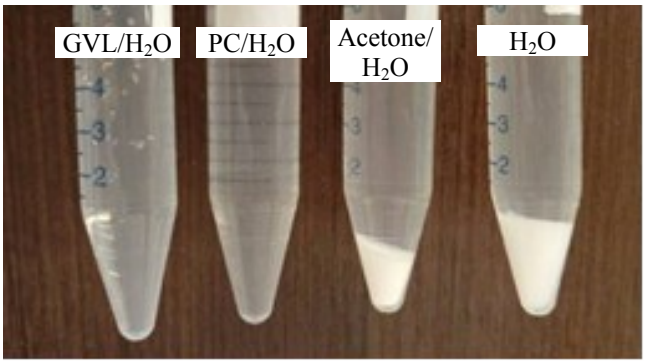

Figure S1. Controls experiments without substrate (conditions: 55.5 mM $SnCl_4$ in solvent mixture (1:1 v/v) or water at 120^{o}C for 10 min).

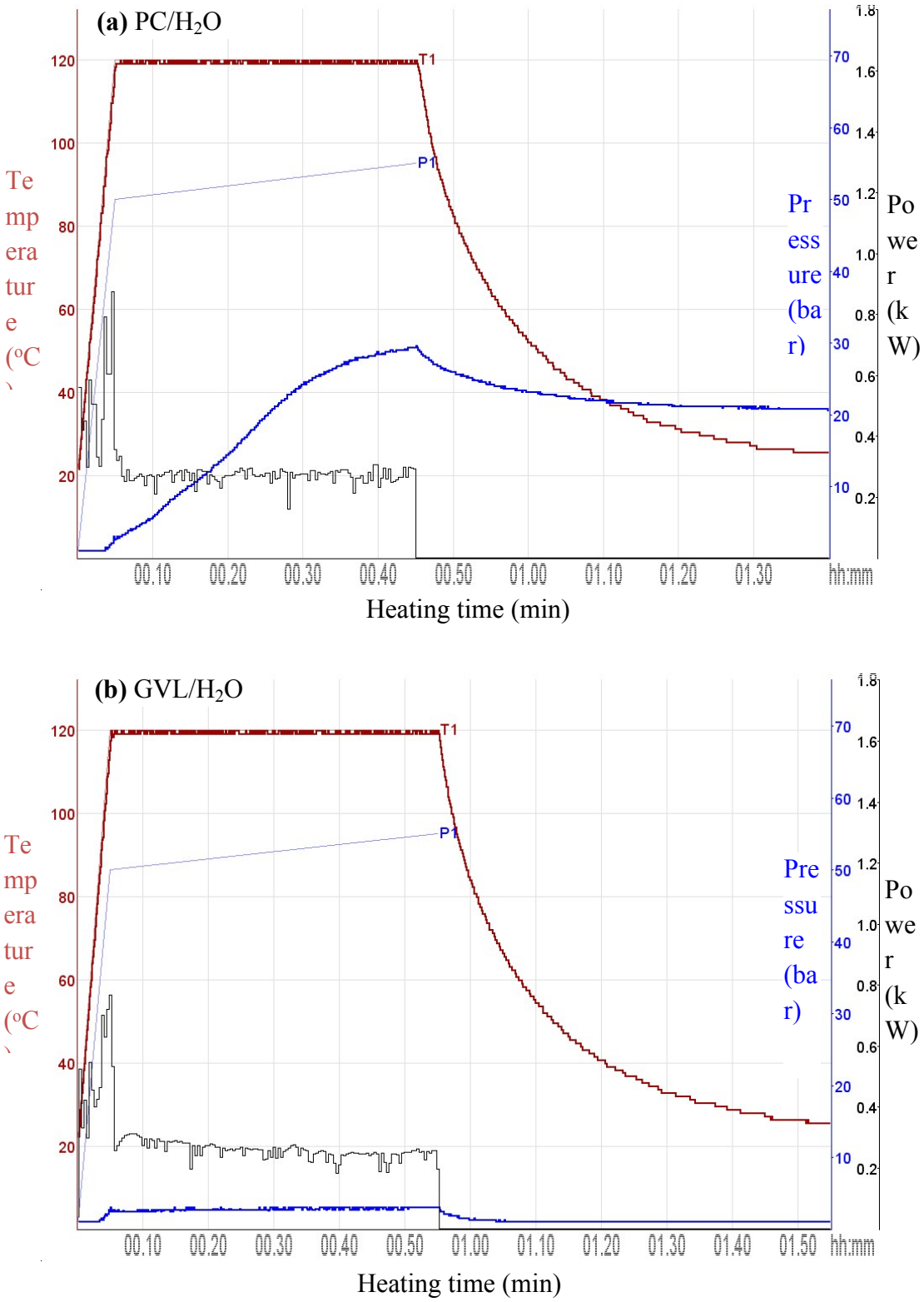

Figure S2. Records of in-vessel pressure and temperature during reaction in (a) PC/H_2O and (b) GVL/H_2O.

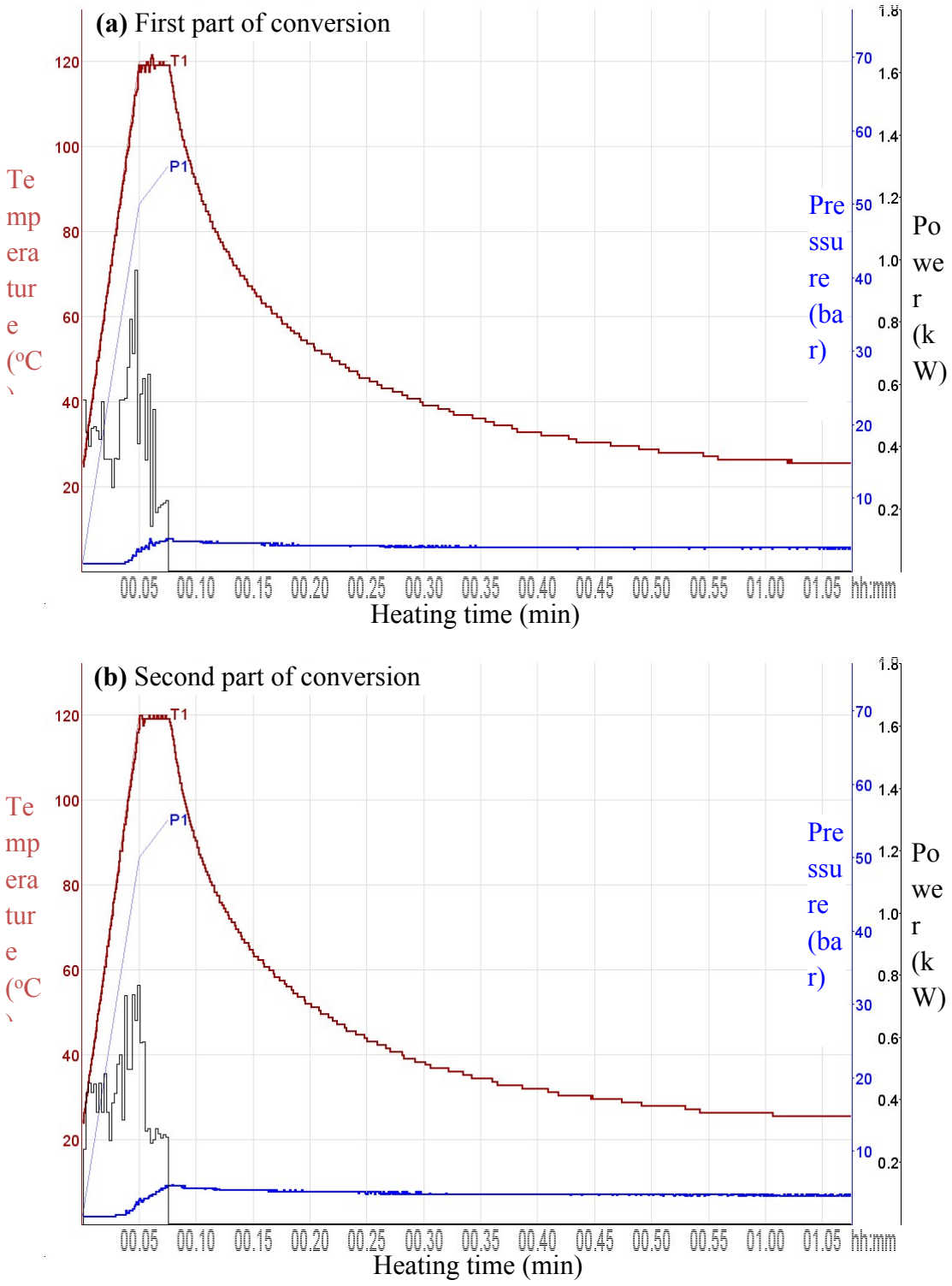

Figure S3. Records of in-vessel pressure and temperature during reaction in PC/H_2O (1:1 v/v) *with* pressure release midway: (a) heating 5 wt/v% substrate with 55.5 mM $SnCl_4$ at 120°C for 2.5 min; after cooling and opening the vessel for pressure release, (b) the mixture was heated again at 120°C for 2.5 min. Ramping was completed in 5 min.

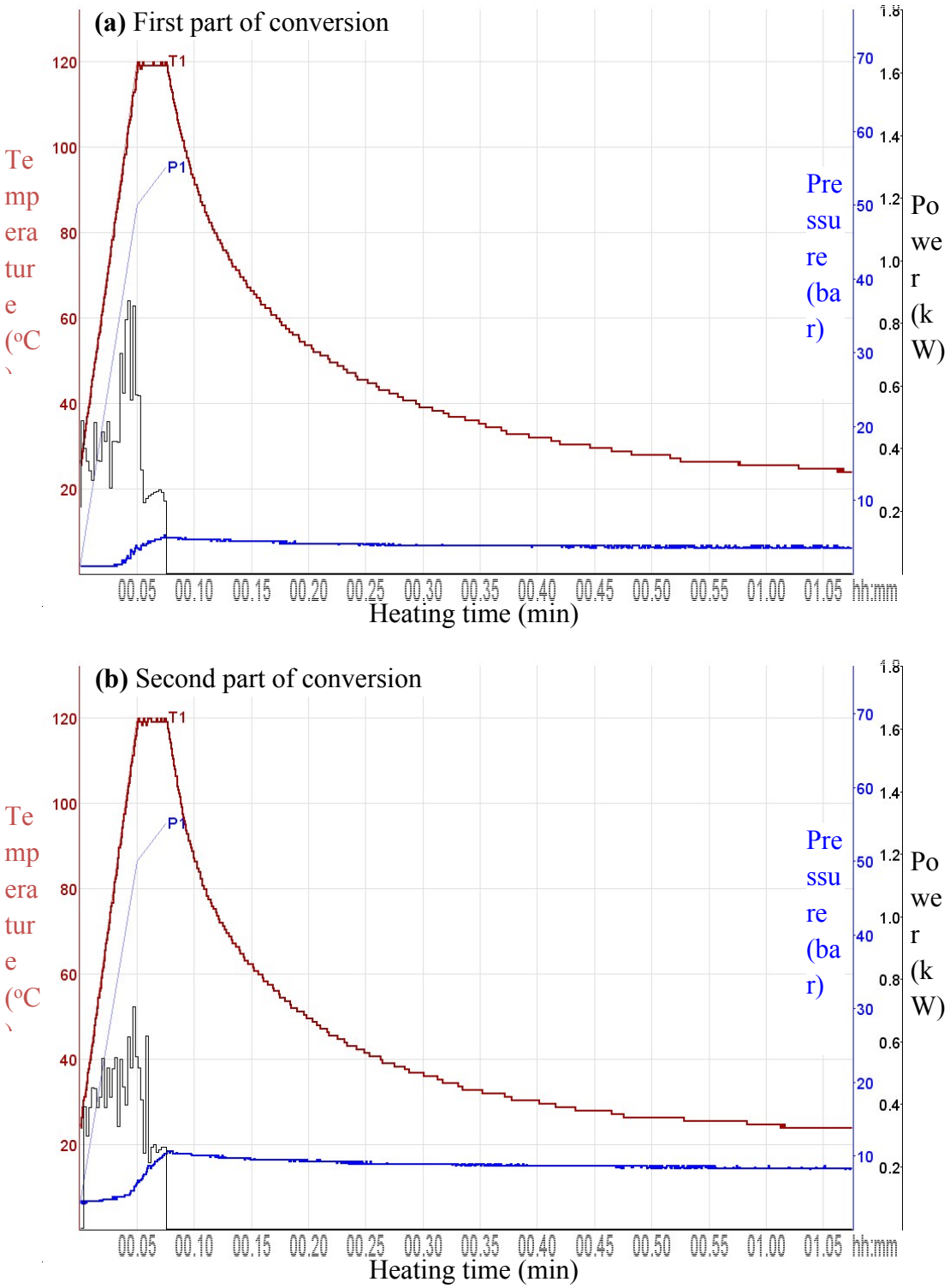

Figure S4. Records of in-vessel pressure and temperature during reaction in PC/H_2O (1:1 v/v) *without* pressure release midway: (a) heating 5 wt/v% substrate with 55.5 mM $SnCl_4$ at 120°C for 2.5 min; after cooling, (b) the mixture was heated again at 120°C for 2.5 min. Ramping was completed in 5 min.

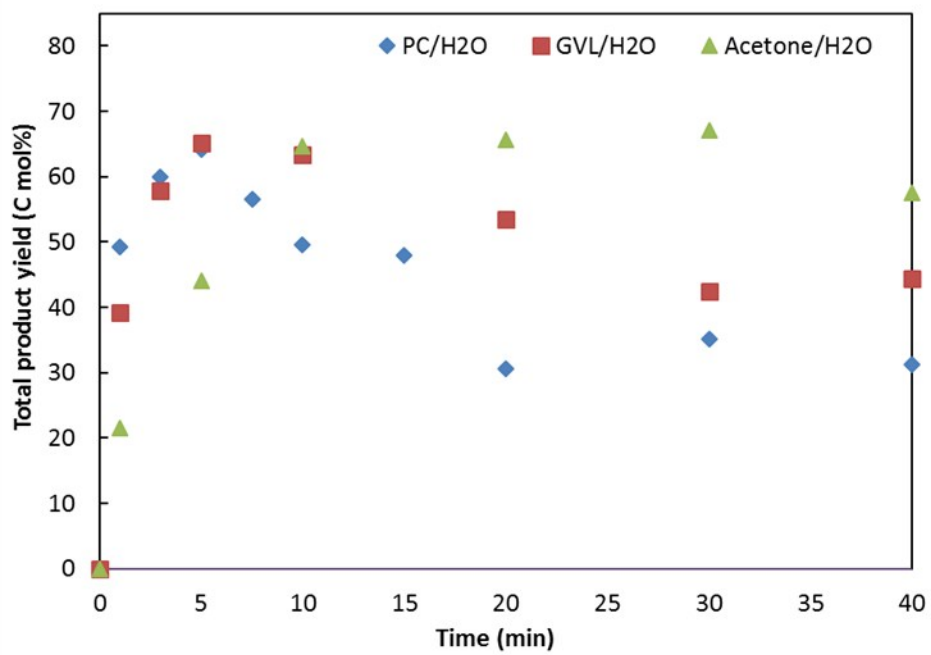

Figure S5. Total product yields resulted from the catalytic conversion of bread waste in different solvent mixtures (1:1 v/v) (conditions: 5 wt/v% substrate and 55.5 mM $SnCl_4$ at 120 ^oC; yield = $product_{Cmol}/substrate_{Cmol} \times 100\%$).