

Supplementary Materials

Table S1. TGA results obtained for samples: T_{30%} and final residual mass %.

Sample	T _{30%} (°C)	Final Residue wt%
VESOV	377.7	11.7
VESOV+ER (30 wt%)	360.5	14.2
VESOV+ER (50 wt%)	360.6	17.4
VESOV+ER (70 wt%)	355.3	16.8
VSB+ER	354.1	15.8

The most significant signals of the FTIR spectra of the starting reagents used, as well as the VSB are assigned.

Vanillin (cm⁻¹): 3650–3200 (ν, OH), 2850 (ν, O=C-H), 1670 (ν, C=O), 1590–1450 (ν, C-C arom), 1250 (ν_{sim}, C-O-C), 1150–1000 (ν, C-O(H)), 850–600 (δ_{oop}, 3 bands H-Carom).

1,4-butandiamine (cm⁻¹): 3400–3250 (ν, N-H), 2950 (ν_{as}, H-Csp³), 2850 (ν_{sim}, H-Csp³), 1625–1500 (δ, N-H), 1200–1025 (ν_{sim}, C-N), 800 (δ, N-H), 730 (γ, CH₂).

VSB (cm⁻¹): 3600–3250 (ν, OH), 3080–3030 (ν, H-Carom), 2975 (ν_{as}, H-Csp³), 2825 (ν_{sim}, H-Csp³), 1655 (ν, C=N), 1590–1450 (ν, C-C arom), 1250 (ν_{sim}, C-O-C), 1150–1000 (ν, C-O(H)), 875–750 (δ_{oop}, 3 bands H-Carom).

The following figures **S1** and **S2** show the assignments to the displacement peaks obtained by ¹H-NMR of BDA and VAN, as well as the different signals obtained: vanillin, 1,4-butandiamine and VSB.

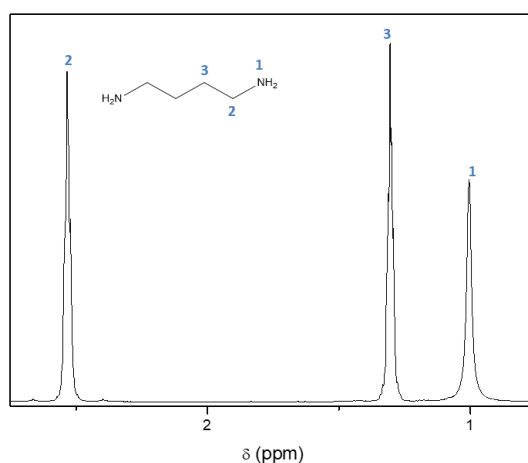


Figure S1. ¹H-NMR spectrum of 1,4-butandiamine.

¹H-NMR 1,4-butandiamine (CDCl₃, 600 MHz) δ (ppm): 2.53 (t, J = 7.4 Hz, 4H, CH₂, H-2), 1.30 (t, J = 7.4 Hz, 4H, CH₂, H-3), 1.00 (s, 4H, NH₂).

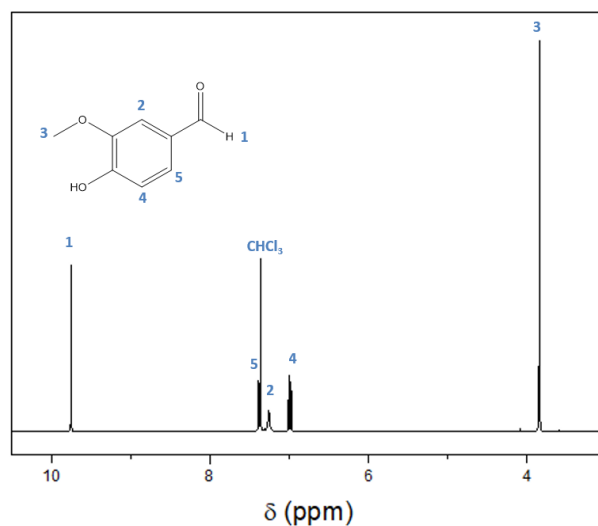


Figure S2. ^1H -NMR spectrum of vanillin.

^1H -NMR Vanillin (CDCl_3 , 600 MHz) δ (ppm): 9.74 (s, 1H, $\text{H}_{\text{Aldehyde}}$), 7.36 (dd, $J = 7.7, 1.3$ Hz, 1H, H-5_{arom}), 7.19 (dd, $J = 1.3$ Hz, 1H, H-2_{arom}), 6.98 (dd, $J = 7.7$ Hz, 1H, H-4_{arom}), 3.85 (s, 3H, OMe).

^1H -NMR VSB (CDCl_3 , 600 MHz) δ (ppm): 9.83 (s, 1H, OH), 8.17 (s, 2H, H-2), 7.41 (dd, $J = 8.4, 1.7$ Hz, 2H, H-8_{arom}), 7.08 (dd, $J = 1.7$ Hz, 2H, H-4_{arom}), 6.91 (dd, $J = 8.4$ Hz, 2H, H-7_{arom}), 3.93 (s, 6H, OMe), 3.69 (t, $J = 7.4$ Hz, 4H, CH_2 , H-2), 1.77 (t, $J = 7.4$ Hz, 4H, CH_2 , H-1).

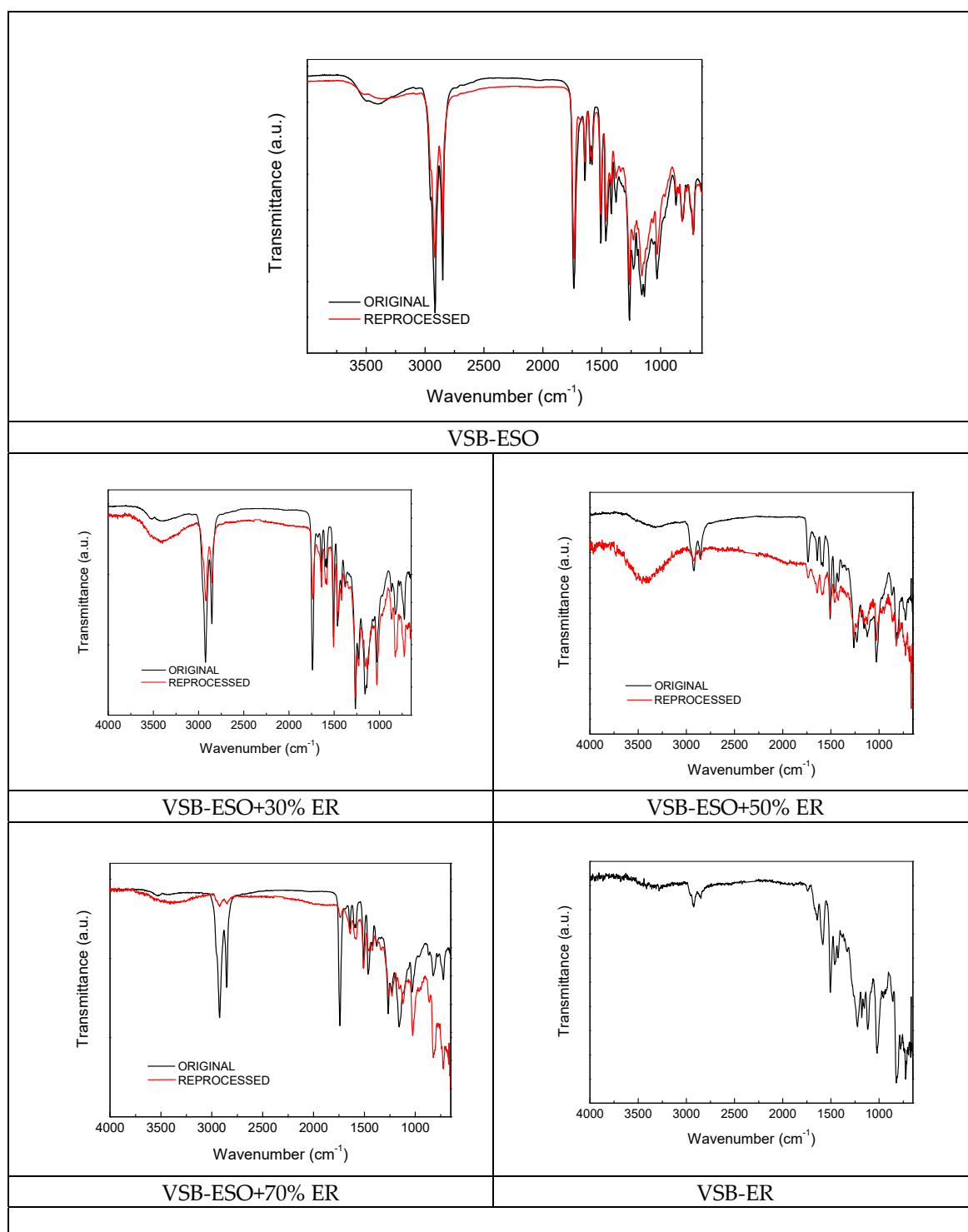


Figure S3. FTIR spectra of pre- (black) and post-reprocessed (red) sample.