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Nanoscale driven structural changes and associated superparamagnetism in magnetically diluted Ni-Zn ferrites

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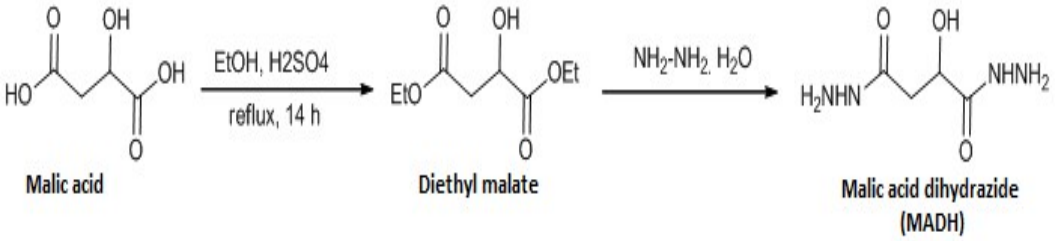
Supplementary Material



Scheme 1

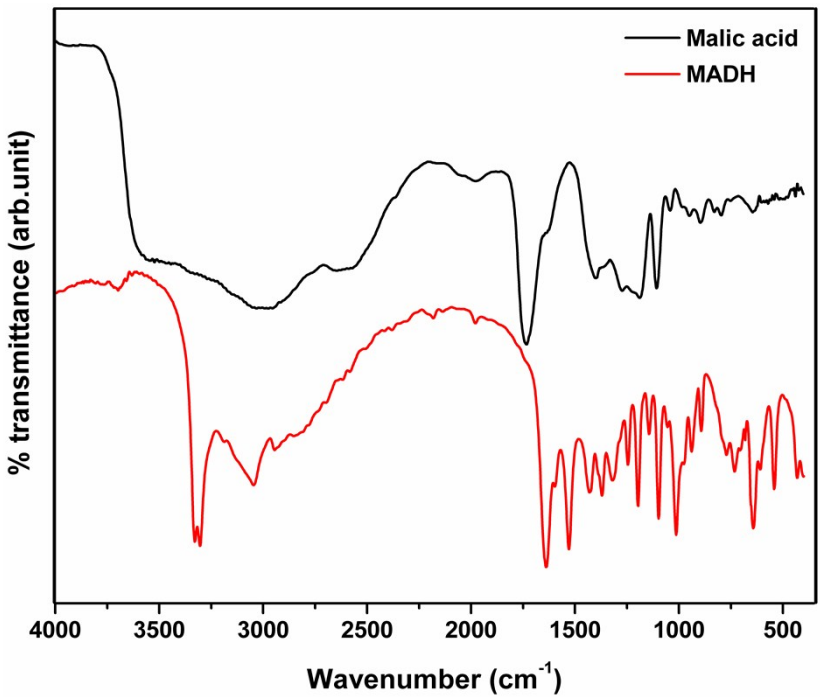


Fig. S2 FTIR spectra of Malic acid and Malic acid Dihydrazide

^{1}H NMR of Malic acid dihydrazide: ^{1}H NMR (DMSO-d_6, 400 MHz) δ 2.20 (dd, 1H, H-3, *J* = 9.6, 14.4Hz);
δ 2.39 (dd, 1H, H-3, *J* = 3.6, 14.4Hz);
δ 4.26 (br S, 4H, 2(N-NH2);
δ 4.28 (t, 1H, H-2);
δ 5.50 (d, 1H, OH, exchangeable with D_2O);
δ 8.92 (s, 1H,CONH);
δ 8.97 (s, 1H, CONH).

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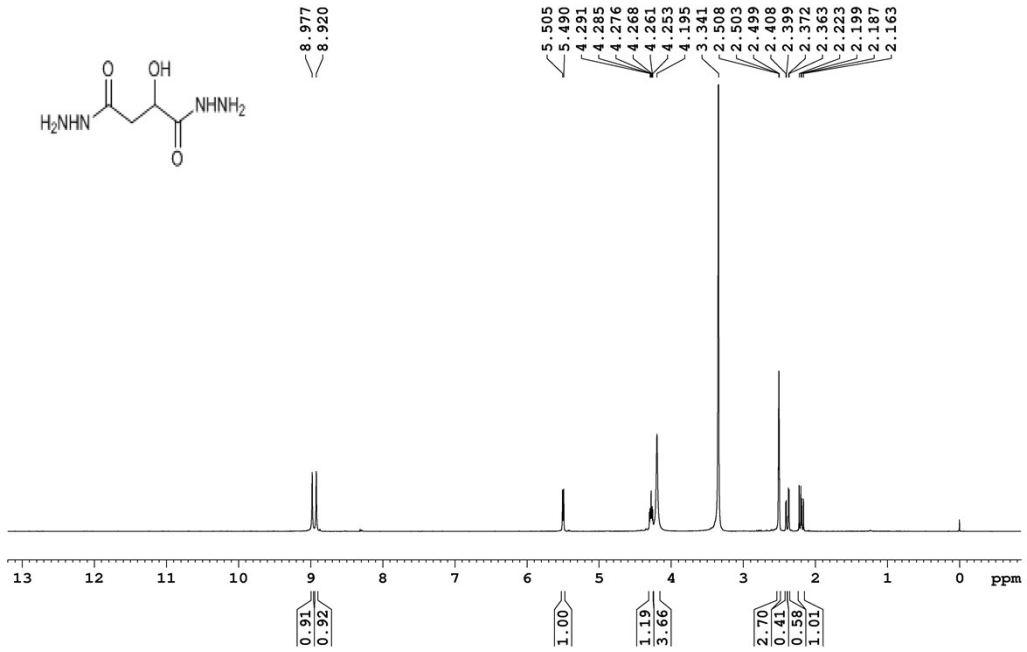

Fig. S3 ^{1}H NMR spectra of Malic acid dihydrazide

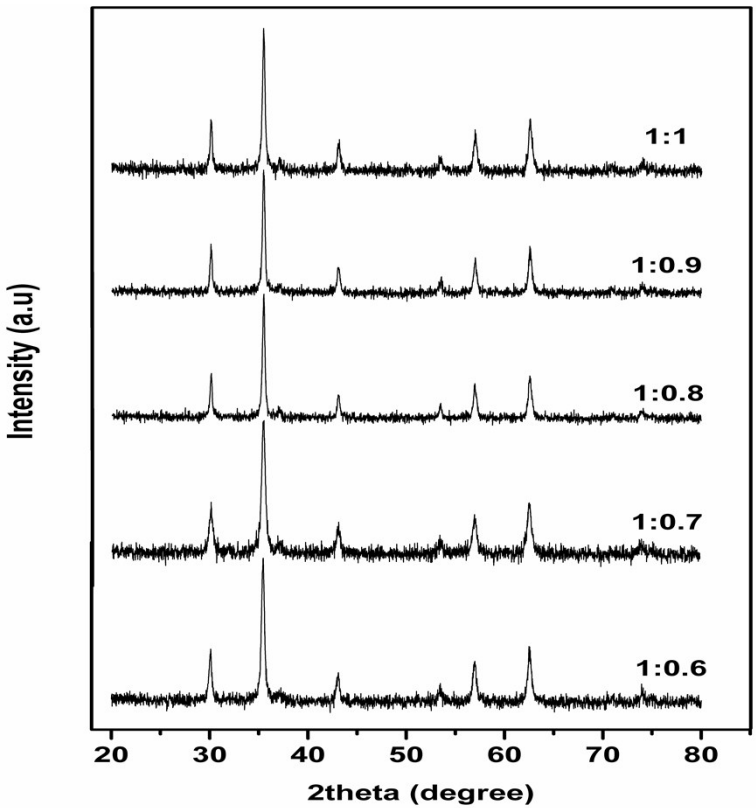

Fig. S4 XRD plots for Optimization of oxidizer to fuel ratio with variation in fuel fraction.