

Supporting Information

One step synthesis of fatty acid diethanolamides and methyl esters from triglycerides using sodium doped calcium hydroxide as nanocrystalline heterogeneous catalyst

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This pdf file includes:

Data (DLS, FT-IR, Mass and ¹H-NMR)

Figures. S1–S6

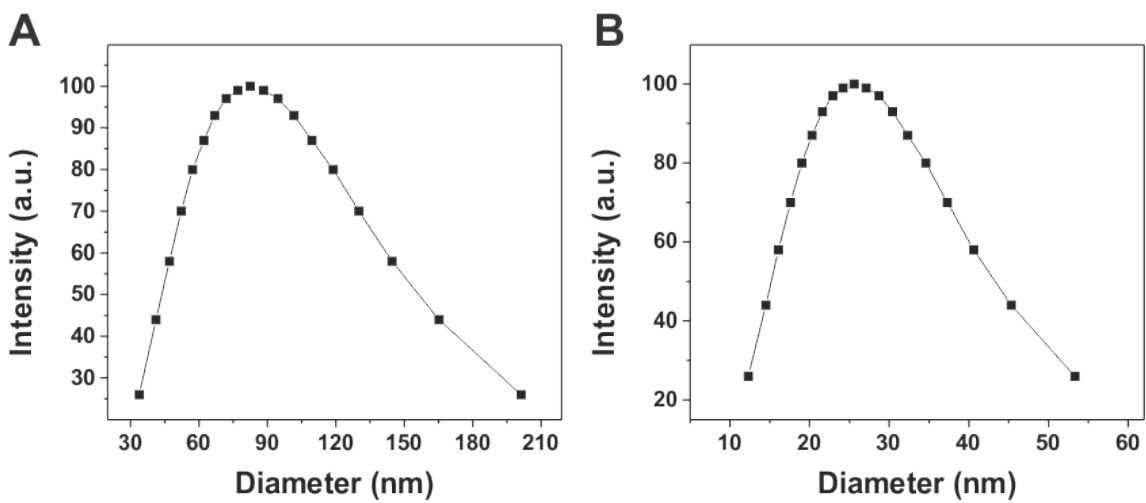


Figure S1. (A) Particle size distributions of CaO and (B) 3.5-Na/CaO.

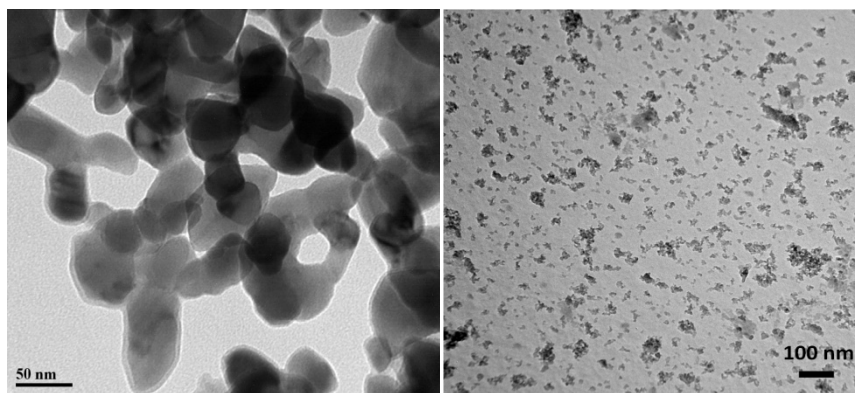


Figure S2. TEM images of 3.5-Na/CaO at different magnifications.

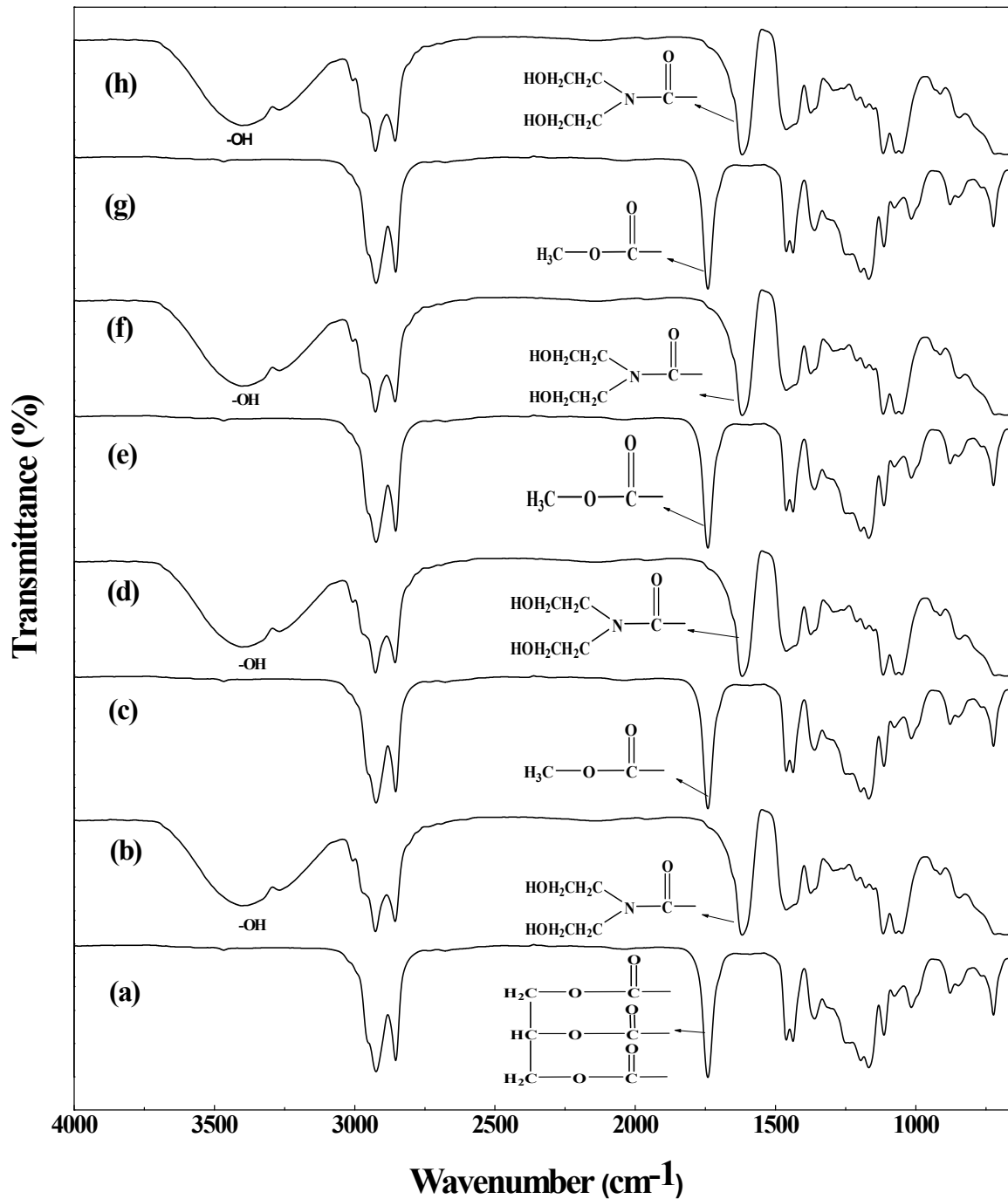


Figure S3. Comparative FTIR spectra of (a) cotton seed oil, (b) fatty acid amide of cotton seed oil, (c) cotton seed oil derived FAME, (d) fatty acid amide of cotton seed oil derived FAME, (e) mutton fat derived FAME, (f) fatty acid amide of mutton fat FAME, (g) methyl laurate, and (h) amide derivative of methyl laurate.

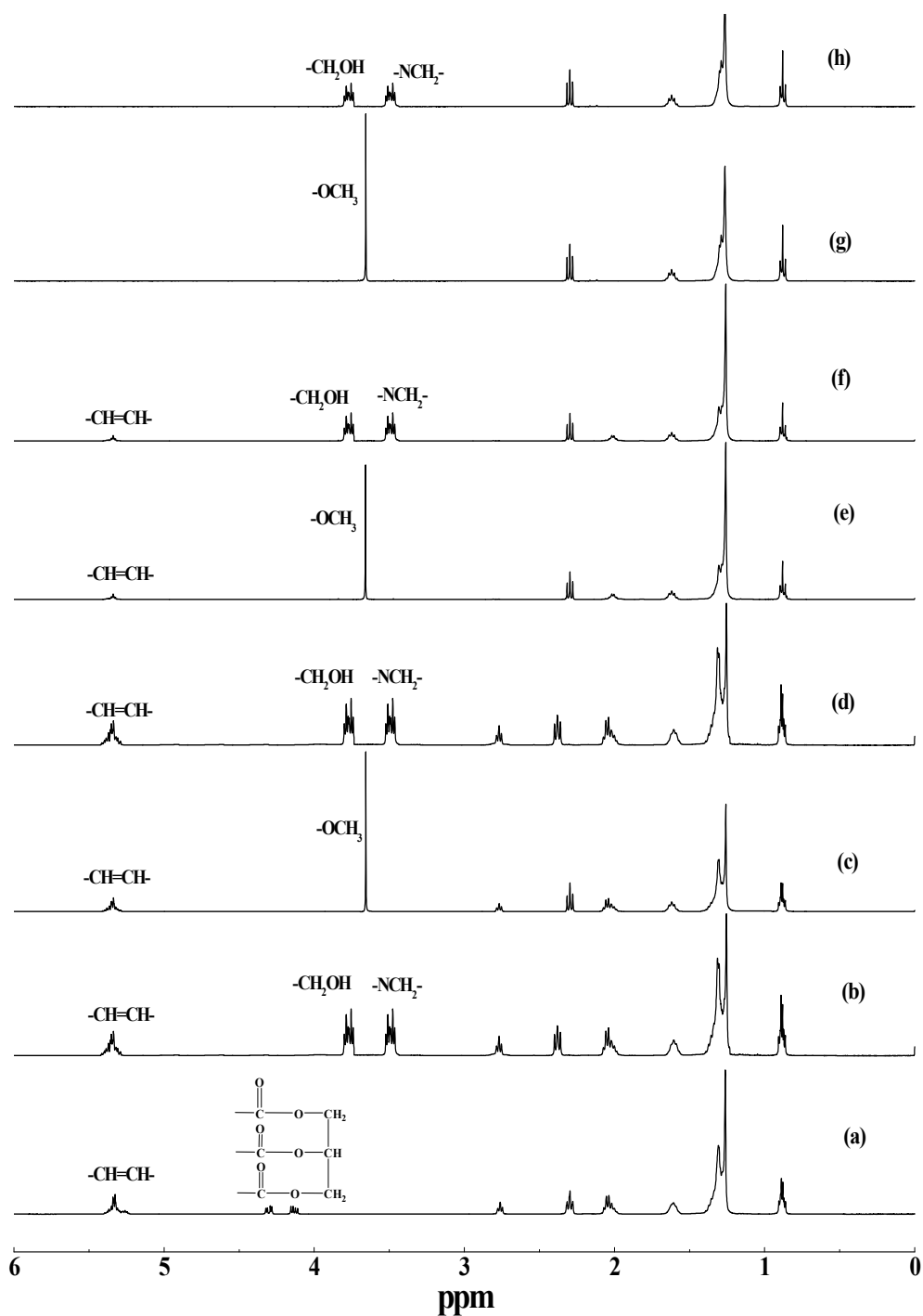


Figure S4. Comparison of $^1\text{H-NMR}$ spectra of (a) cotton seed oil, (b) fatty acid amide of cotton seed oil, (c) cotton seed oil FAME, (d) fatty acid amide of cotton seed oil FAME, (e) mutton fat FAME, (f) fatty acid amide of mutton fat FAME, (g) methyl laurate, and (h) amide derivative of methyl laurate.

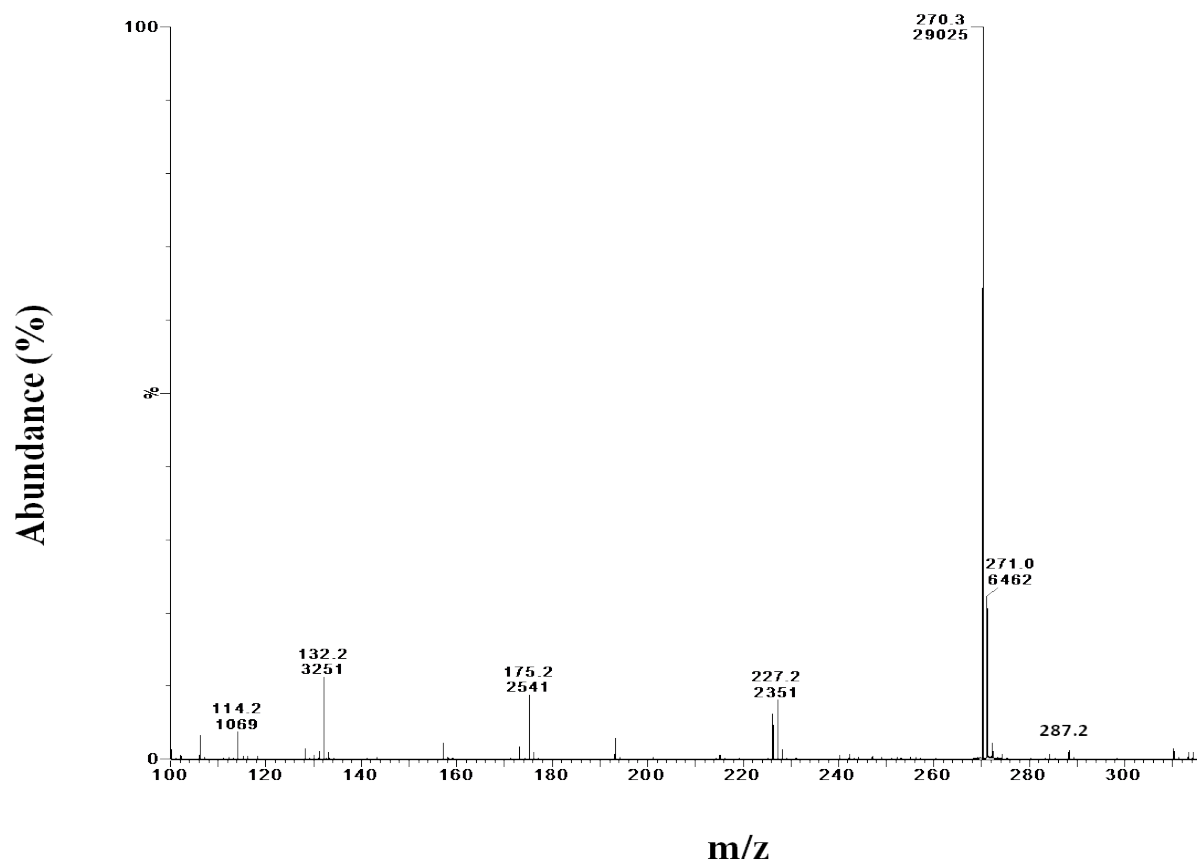


Figure S5. Mass spectra of N,N-diethanoldodecylamide (amide derivative of methyl laurate).

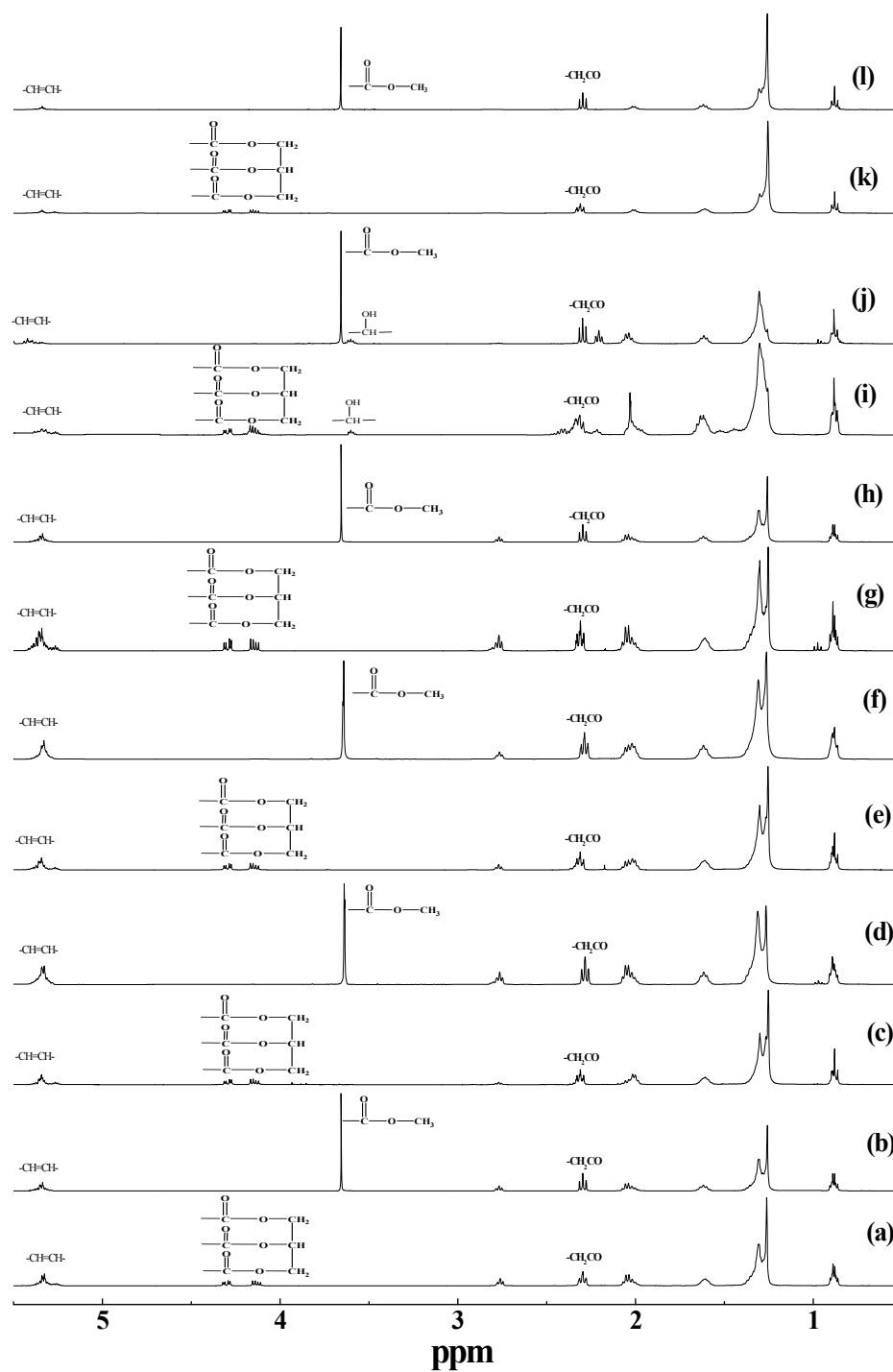


Figure S6. Comparison of ¹H-NMR spectra of triglycerides and corresponding methyl esters, (a) cotton seed oil, (b) cotton seed oil derived fatty acid methyl ester, (c) karanja oil, (d) karanja oil derived methyl ester, (e) jatropha oil, (f) jatropha oil derived methyl ester, (g) soybean oil, (h) soybean oil derived methyl ester, (i) castor oil, (j) castor oil derived methyl ester, (k) mutton fat and (l) mutton fat derived methyl ester.