

SUPPORTING INFORMATION

Carbon-encapsulated highly dispersed FeMn nanoparticles for Fischer-Tropsch synthesis to light olefins

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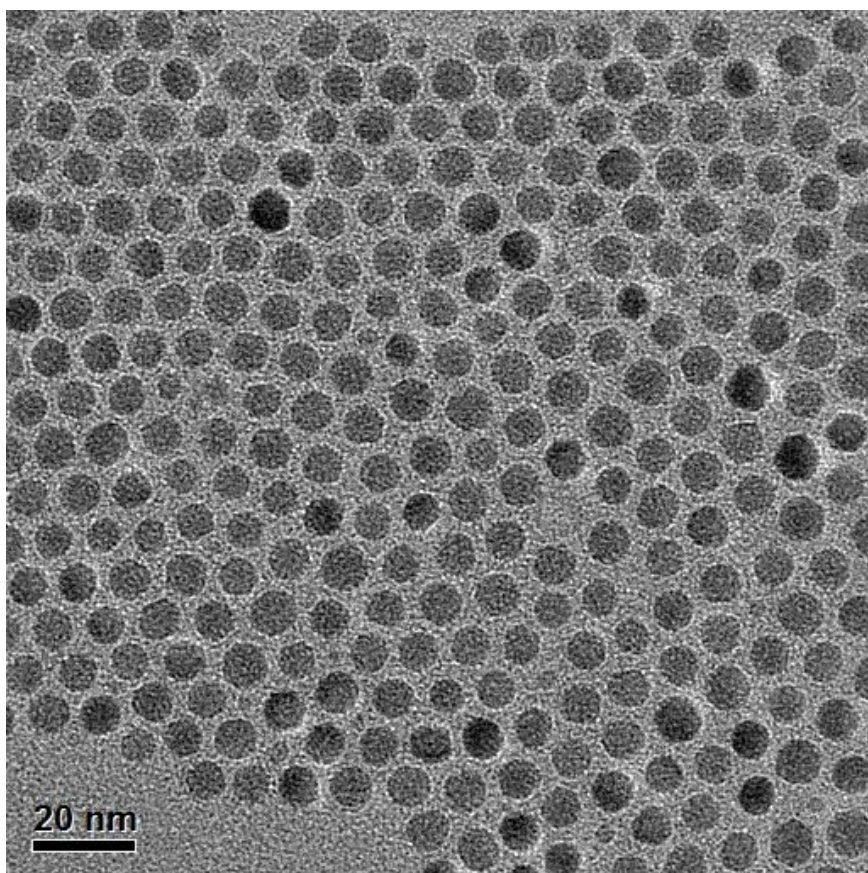


Fig S1: TEM images of as-prepared oleic acid capped FeMn NPS

$$\ln(W_n/n) = n \ln \alpha + \ln[(1 - \alpha)^2 / \alpha]$$

Equation S1 Anderson-Schulz-Flory model for the product distribution

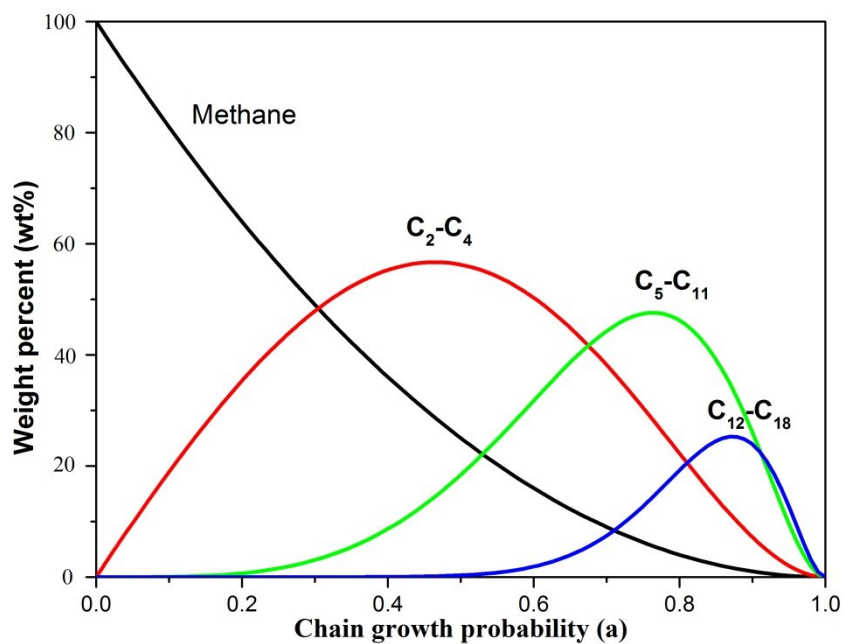


Fig S2 Product distribution predicted by Anderson-Schulz-Flory (ASF) model.

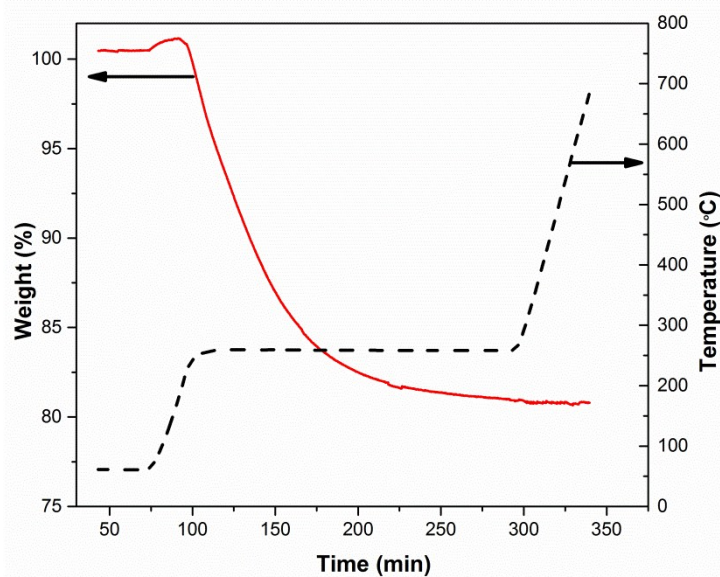


Fig. S3 TGA of the as-synthesized oleic acid capped FeMn NPS

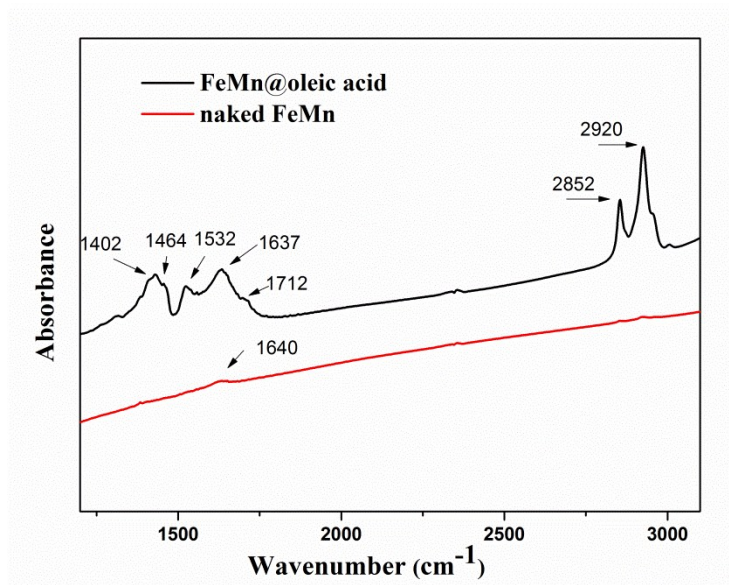


Fig. S4 IR spectra of oleic acid stabilized FeMn NPS and naked FeMn NPS

Table S1 The main vibration mode of oleic acid

Peak (cm ⁻¹)	Assignment ^a
2920	ν_a CH ₂
2852	ν_s CH ₂
1712	ν C=O
1637	ν C=C
1532	ν_a COO-
1464	(sh) (δ CH ₂)
1402	ν_s COO-

^a (sh) shoulder; ν_a = asymmetric stretching; ν_s = symmetric stretching; δ = scissoring

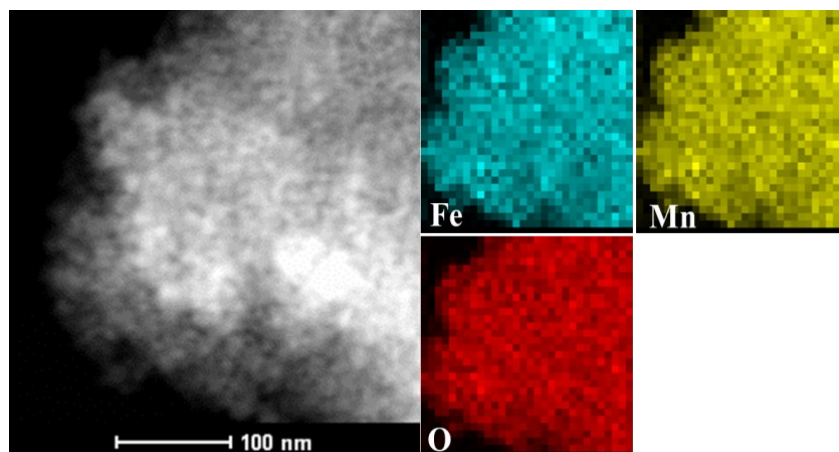


Fig. S5 HAADF-STEM images and corresponding elemental mapping of Fe, Mn and O in the naked FeMn sample.

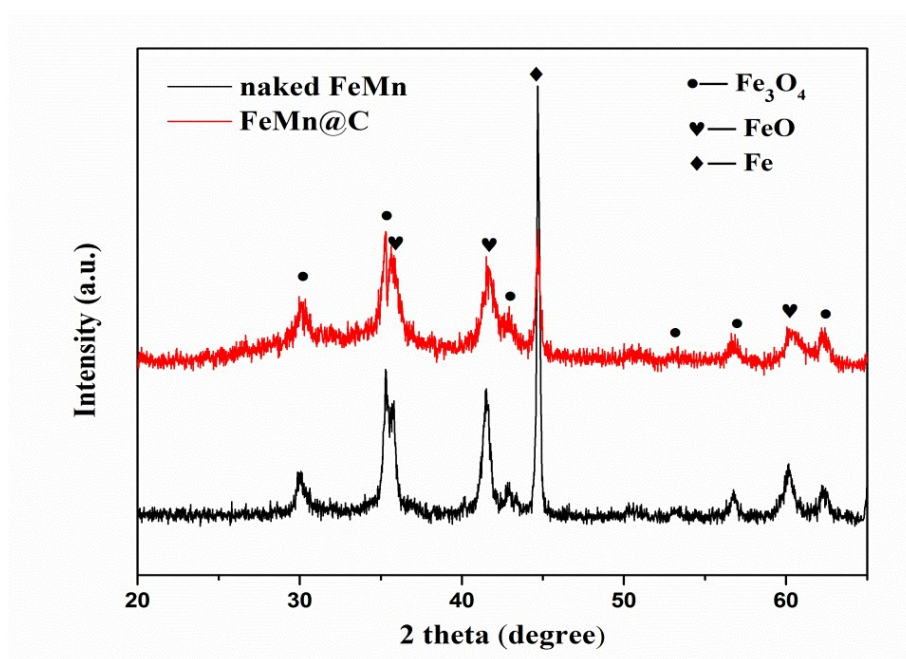


Fig. S6 X-ray diffraction patterns of the reduced catalysts: FeMn@C and naked FeMn

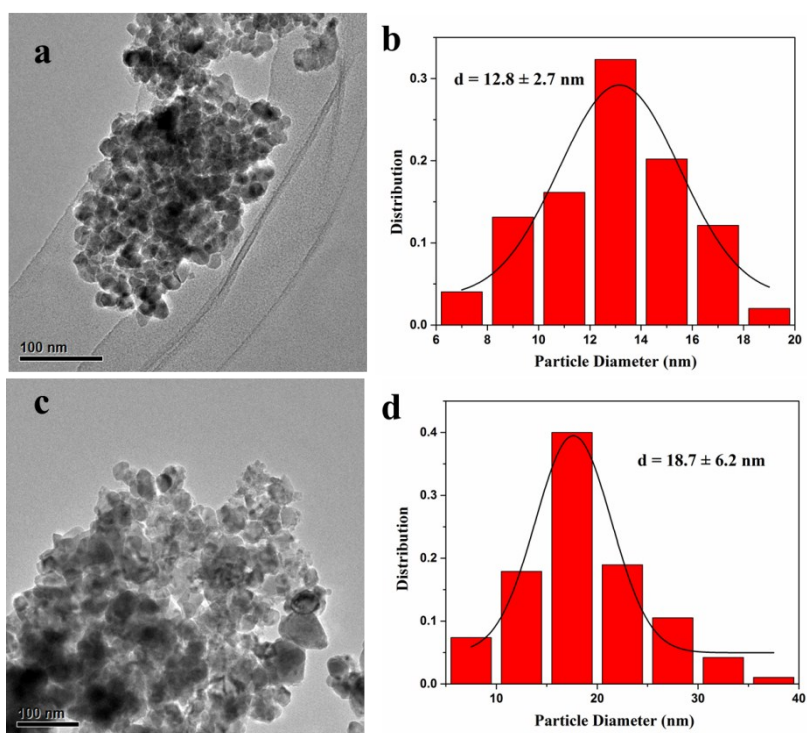


Fig. S7 TEM images and Particles Size Distribution histograms with Gaussian analysis fitting of the reduced catalysts: FeMn@C (a, b) and naked FeMn (c, d).