Electronic Suplementary Information

F^-@*d4r*, a New Type of Acidic Catalytic Site in Zeolite

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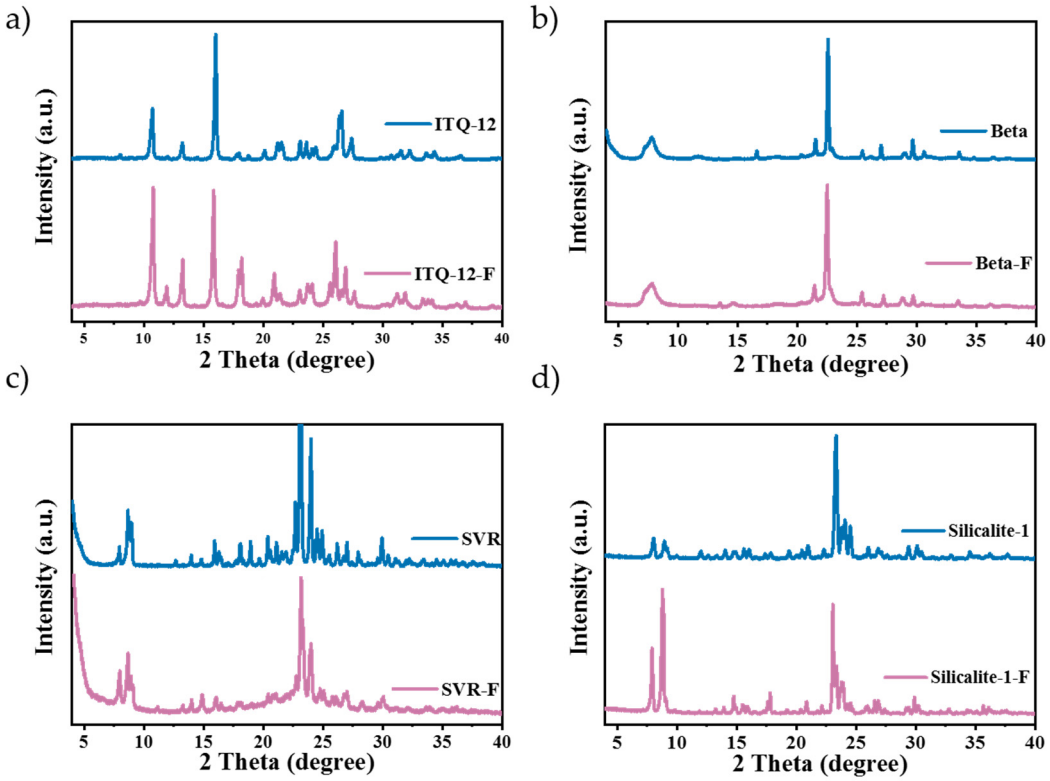

Figure S1: The XRD patterns of a)As synthesized ITQ-12 and F^- treated ITQ-12. b) As synthesized Beta and F^- treated Beta. c) As synthesized SSZ-74 and F^- treated SSZ-74. d) As synthesized Silicalite-1 and F^- treated Silicalite-1.

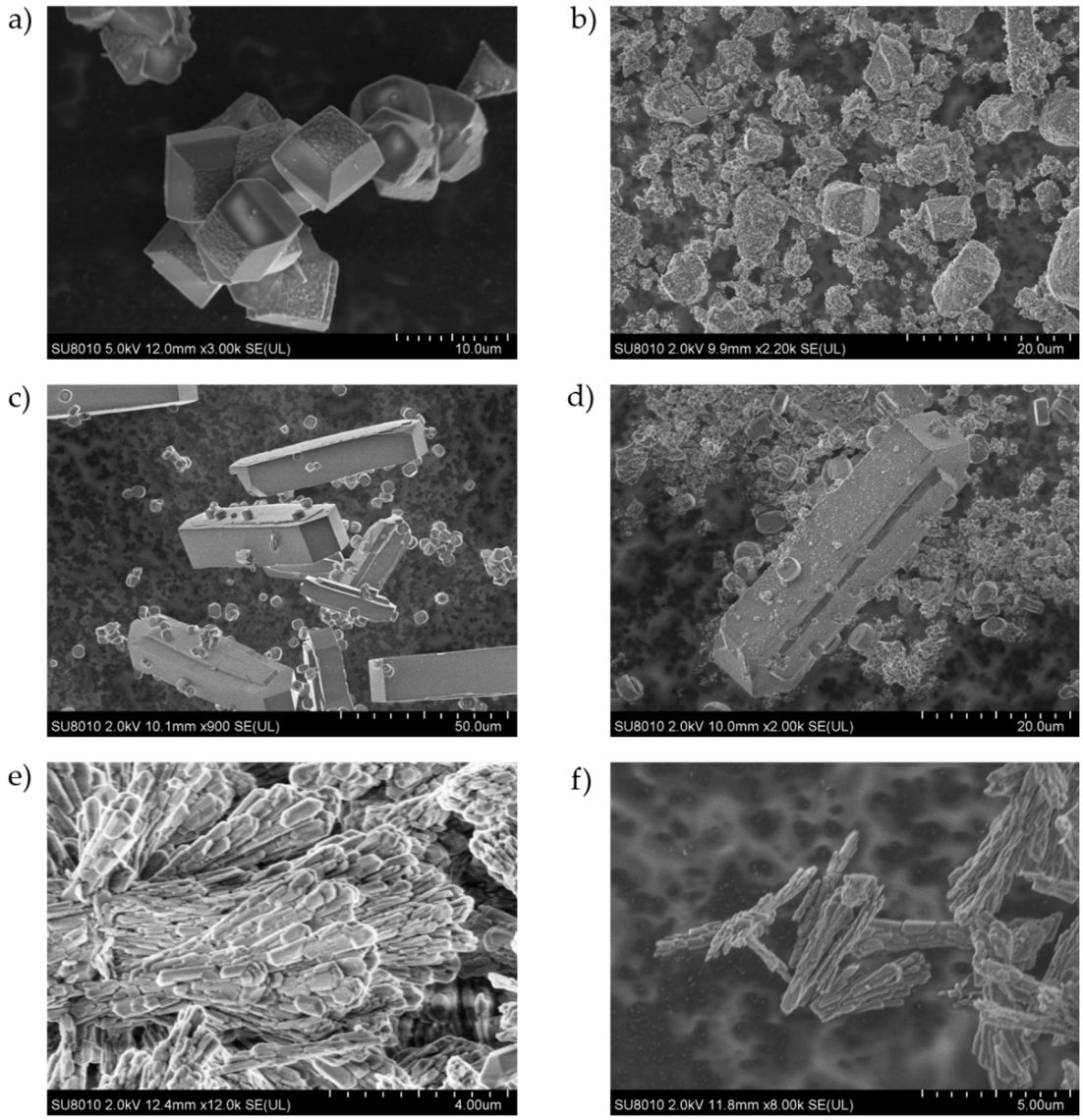

Figure S2: The SEM of a) As synthesized Beta. b) F^- treated Beta. c) SVR and F^- treated SVR. c) Silicalite-1. d) F^- treated Silicalite-1. e) As synthesized ITQ-12 f) F^- treated ITQ-12.

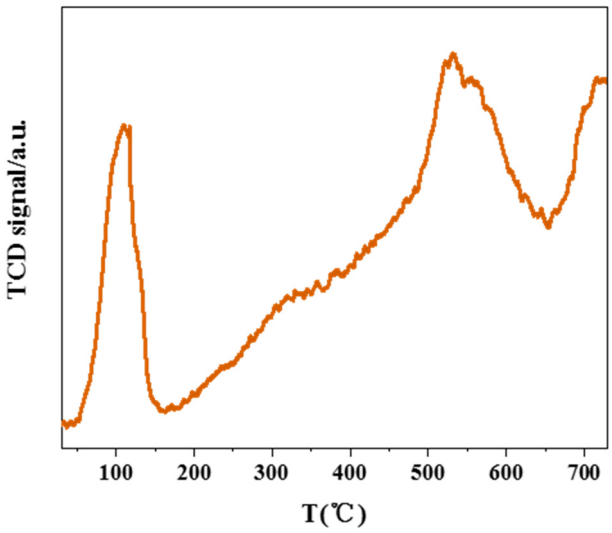

Figure S3: NH_3-TPD profile of ITQ-12-F-300.

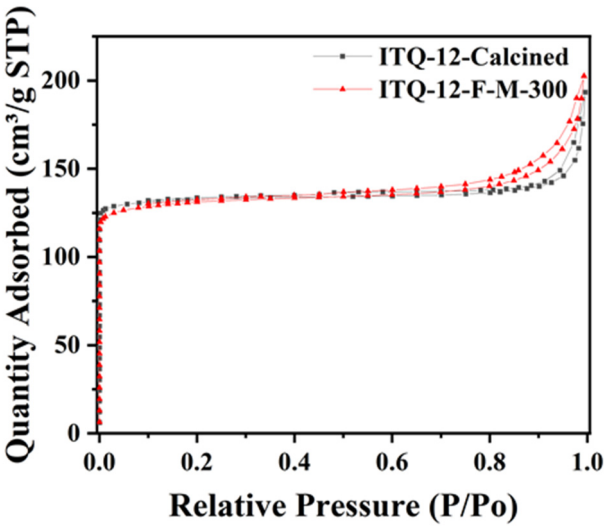

Figure S4: The N_2 adsorption isotherm of ITQ-12-calcined, and ITQ-12-F-300.

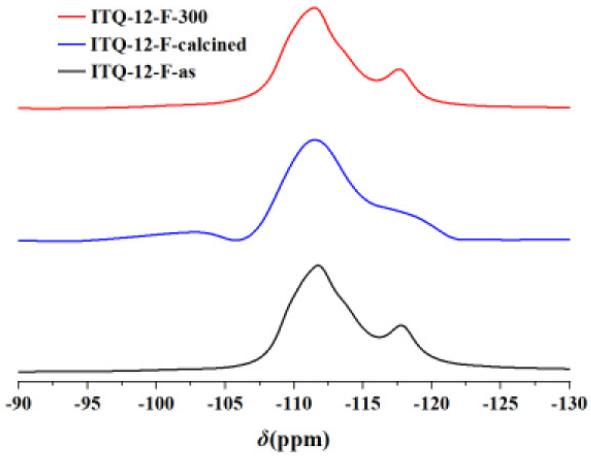

Figure S5: ^{29}Si-MAS-NMR of ITQ-12-F-as, ITQ-12-F-calcined, ITQ-12-F-300.

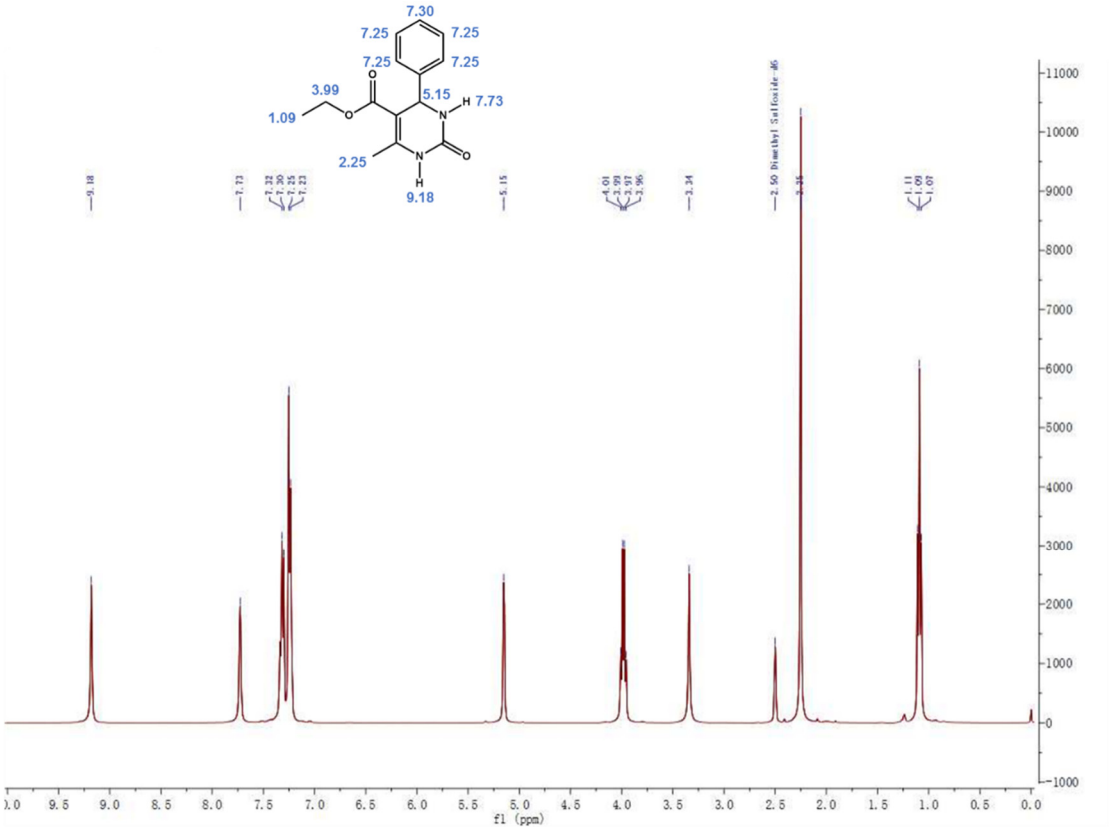

Figure.S6 ^{1}H NMR spectra of purified sample dissolved in DMSO-d6 by Biginelli reaction with F@*d4r* catalysts.

Table S1. Zeta potential and Surface energy of F@*d4r* zeolite samples

Sample	Zeta potential/mV	Surface energy/(mJ·m^{-2})
ITQ-12-as	-3.91	68.24
ITQ-12-F-300	-13.55	66.72
ITQ-12-F-350	-10.02	68.01