

The Curious Case of Zeolite-Clay/Binder Interactions and Their Consequences for Catalyst Preparation

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Supporting Information

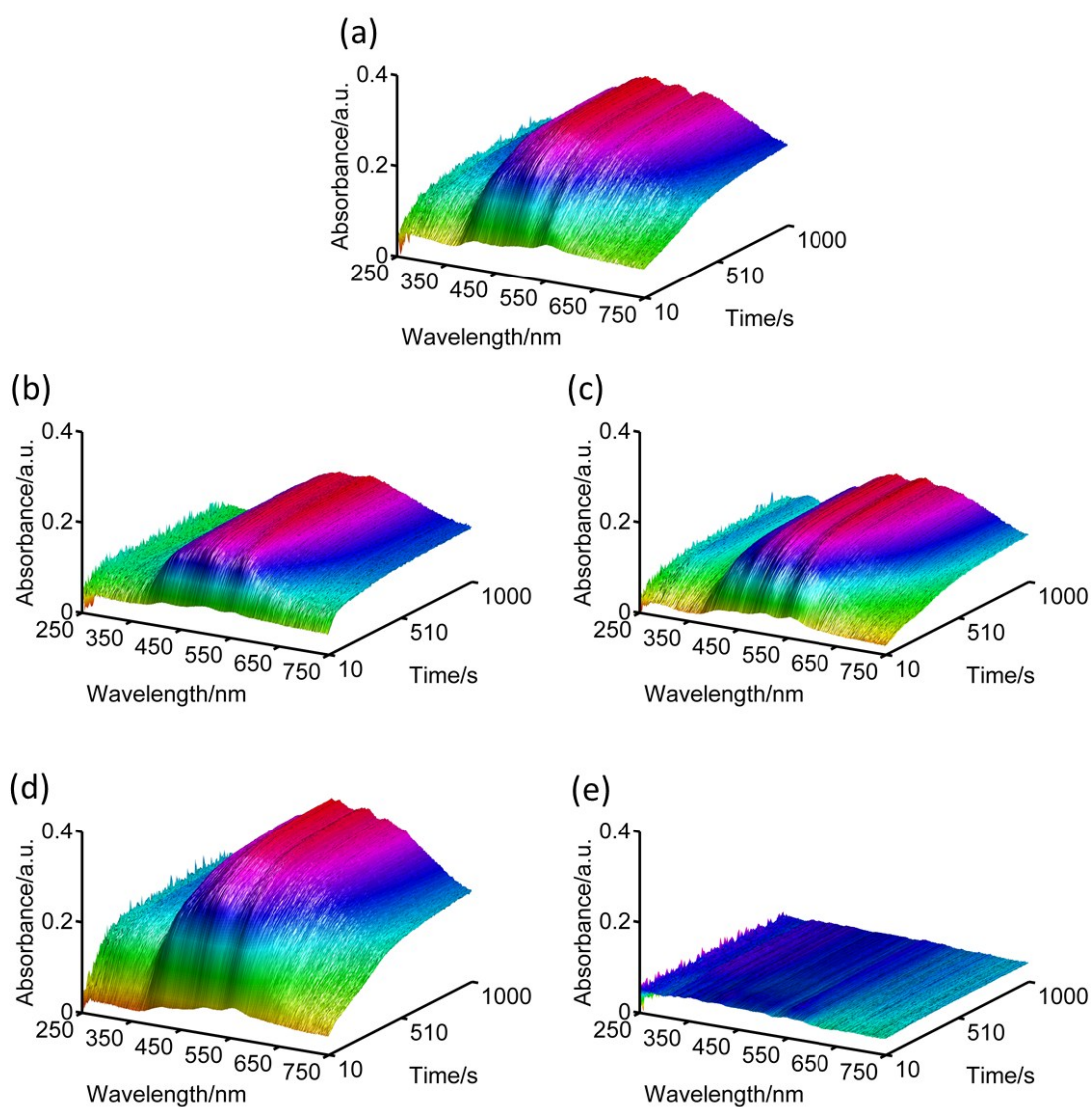


Figure S1: UV-Vis absorption spectra of the following samples upon reaction with thiophene over a period of 1000 s (from 30°C to 120°C): (a) ZSM-5; (b) ZSM-5-Si; (c) ZSM-5-Al; (d) ZSM-5-SiAl; (e) ZSM-5-Kao.

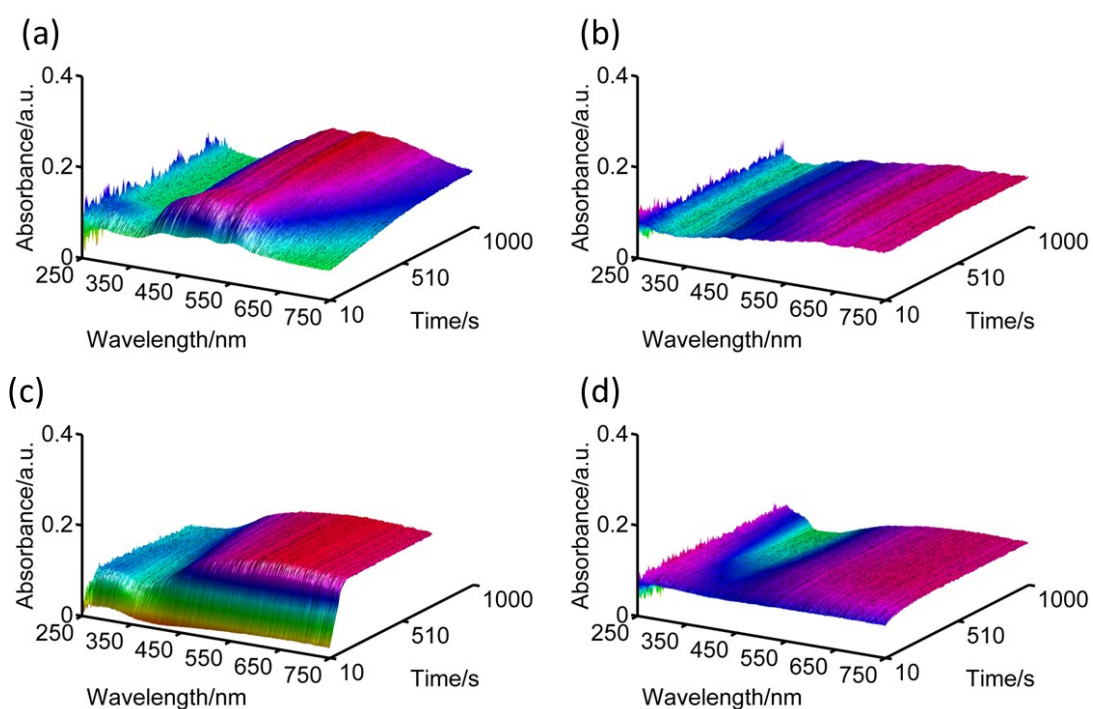


Figure S2: UV-Vis absorption spectra of the following samples upon reaction with thiophene over a period of 1000 s (from 30°C to 120°C): (a) Heat-treated ZSM-5 and non-heat-treated kaolinite pellet; (b) kaolinite; (c) SiO₂; (d) Al₂O₃.

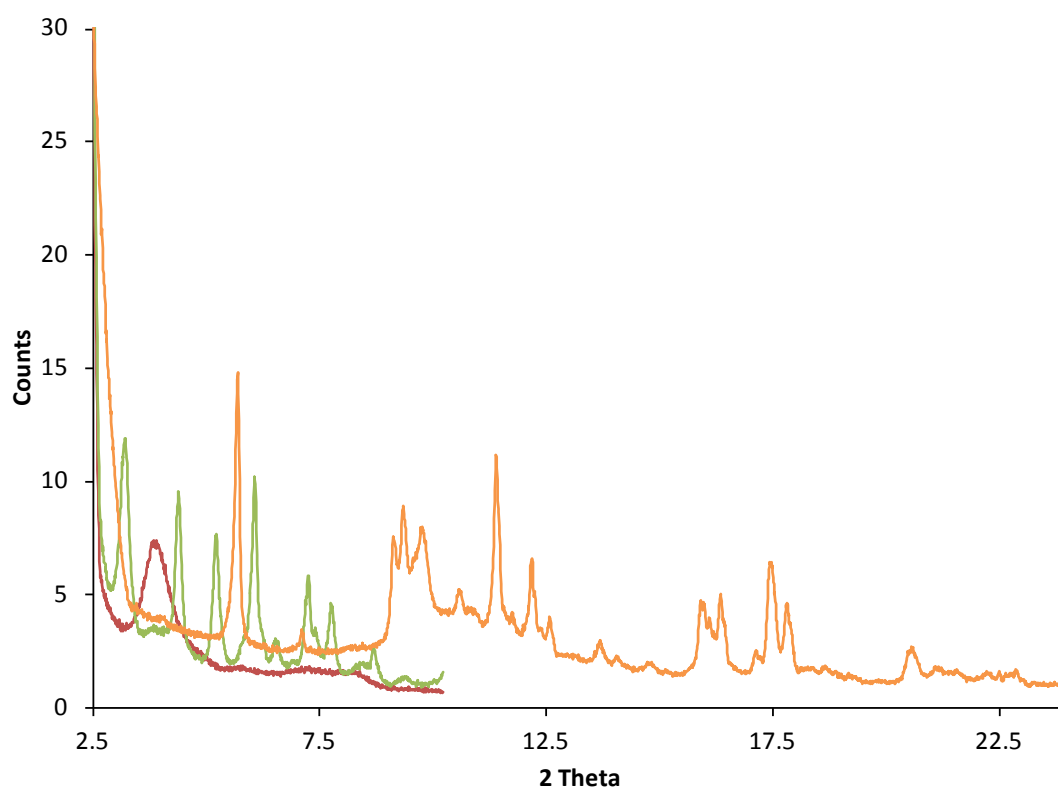


Figure S3: Powder X-Ray Diffraction (XRD) pattern of SiO₂ (red), Al₂O₃ (green) and kaolinite (orange).

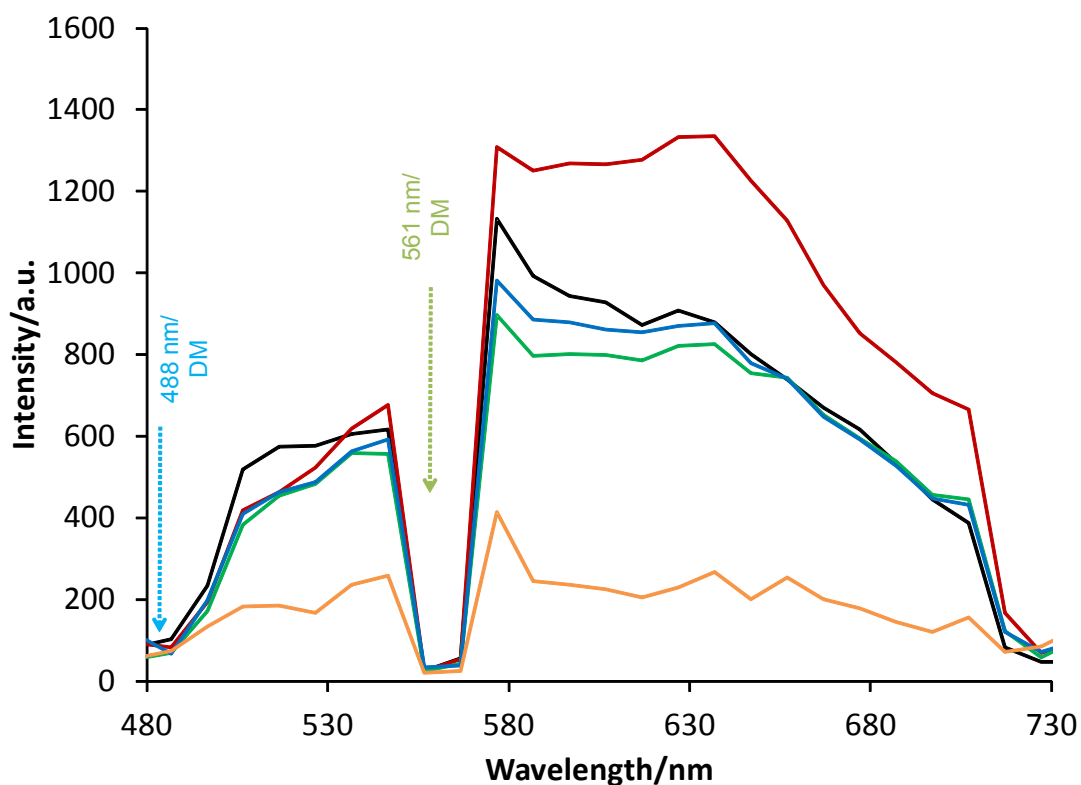


Figure S4: Fluorescence spectra of the following samples reacted with thiophene for a period of 1000 s (from 30°C to 120°C): ZSM-5 (black); ZSM-5-Si (red); ZSM-5-Al (green); ZSM-5-SiAl (blue); ZSM-5-Kao (orange). All samples excited using both 488 and 561 nm lasers simultaneously (with comparable laser power), recording fluorescence intensity in the region of 480 – 730 nm. (Dichroic mirrors introduced at 488 and 561 nm). This Figure corresponds with Figure 5 in the main text.

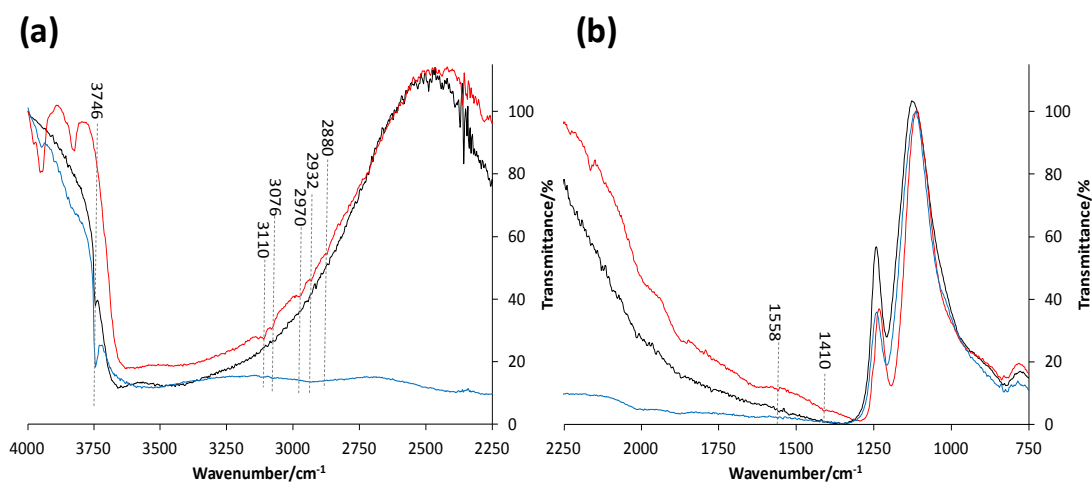


Figure S5: *In-situ* FT-IR spectra of (a, b) ZSM-5, before (black), during (red) and after (blue) reaction with thiophene.