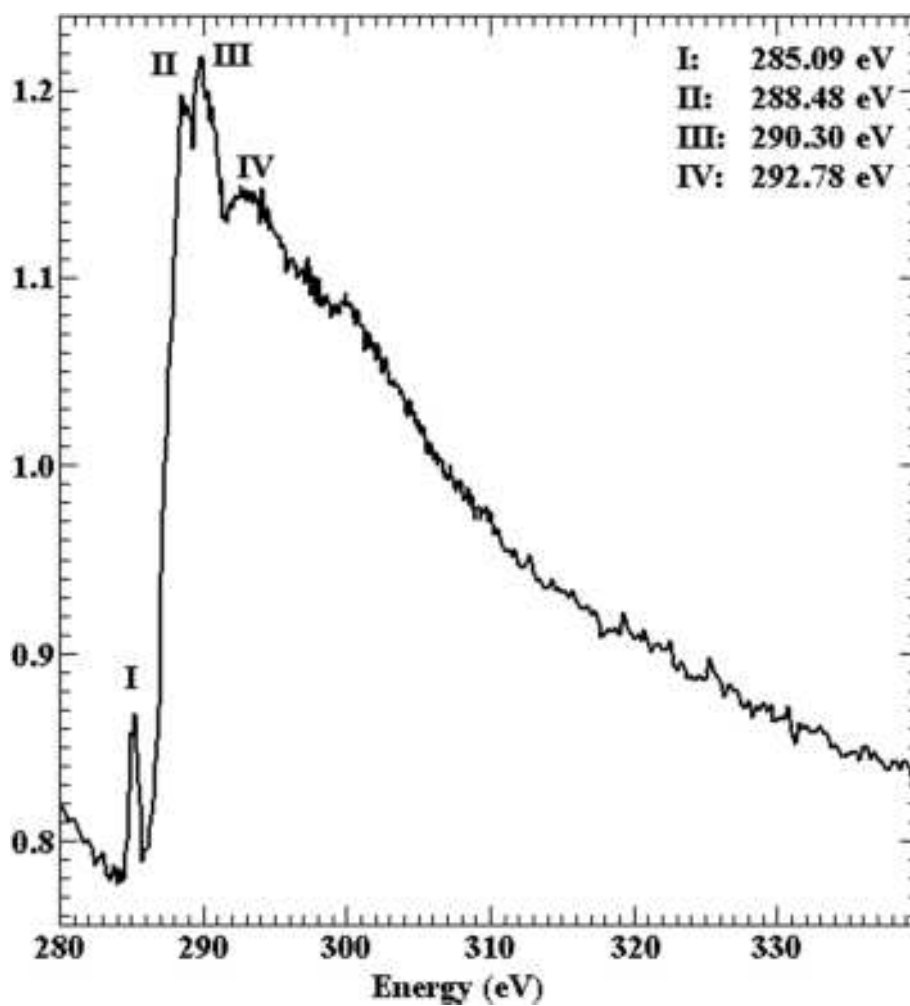
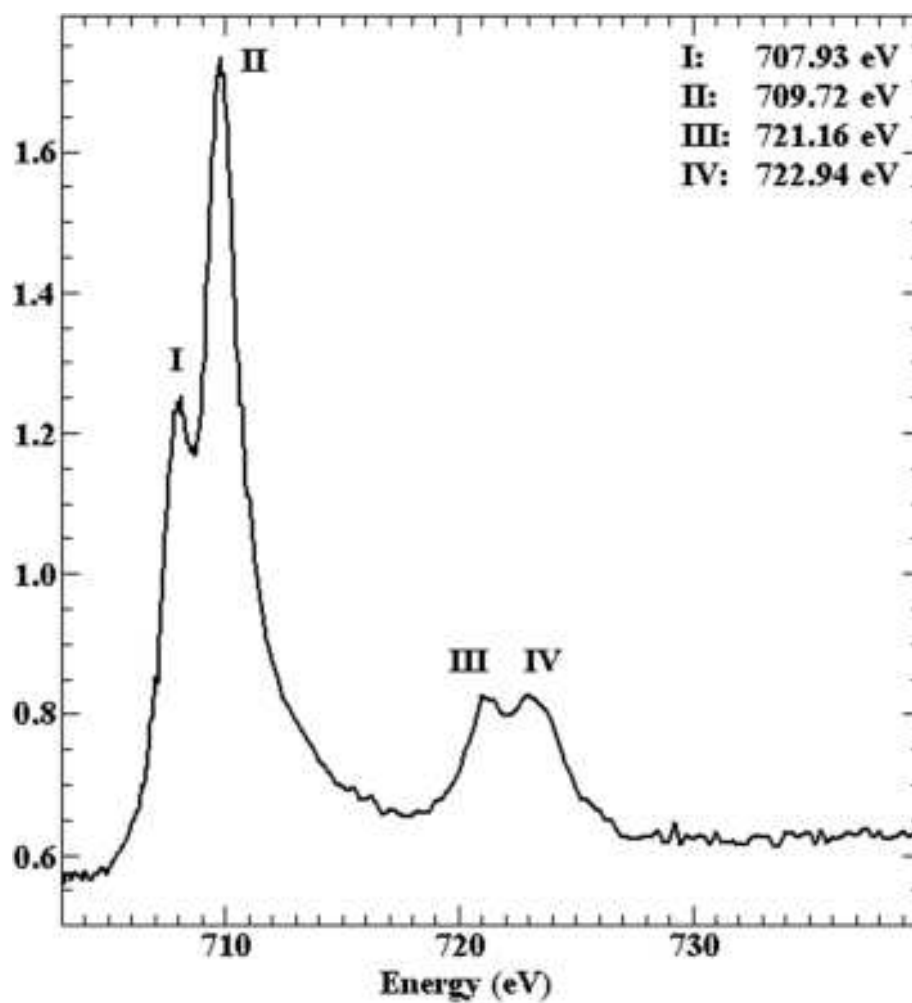


1. C 1s (280 – 340 eV) near-edge X-ray absorption fine structure (NEXAFS) spectra of $\text{Fe}^{3+}/\text{HDTMA}^+$ SWy-2 montmorillonite particles. Intensity of the peak at 288.45 eV, relative to the pre-edge background (near 283 eV) was used to quantify C 1s signal corresponding to HDTMA^+ in subsequent images.

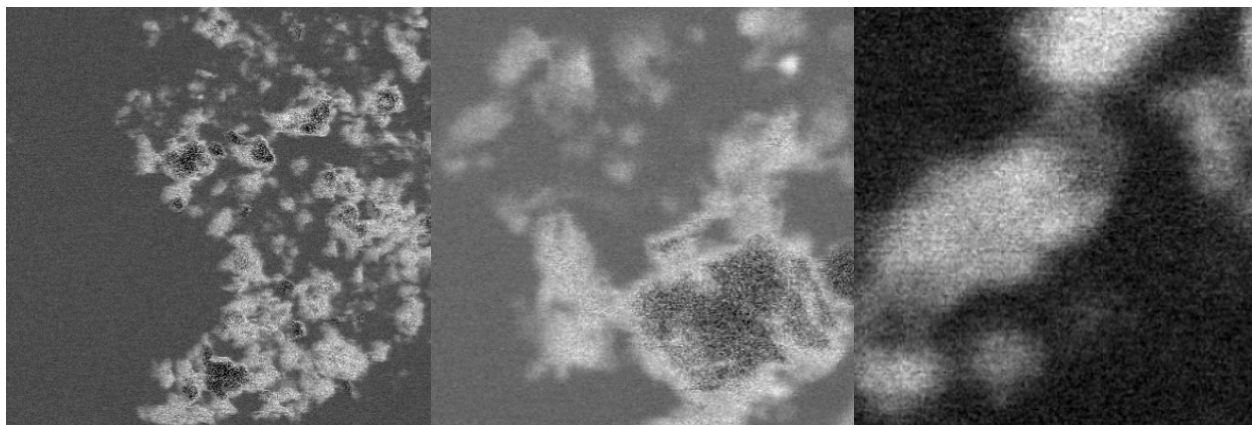


2. Fe 2p (700 – 740 eV) near-edge X-ray absorption fine structure (NEXAFS) spectra of Fe³⁺/HDTMA⁺ SWy-2 montmorillonite particles. Intensity of the peak at 709.7 eV, relative to the pre-edge background (near 703 eV) was used to quantify Fe 2p signal corresponding to surface Fe³⁺ in subsequent images.

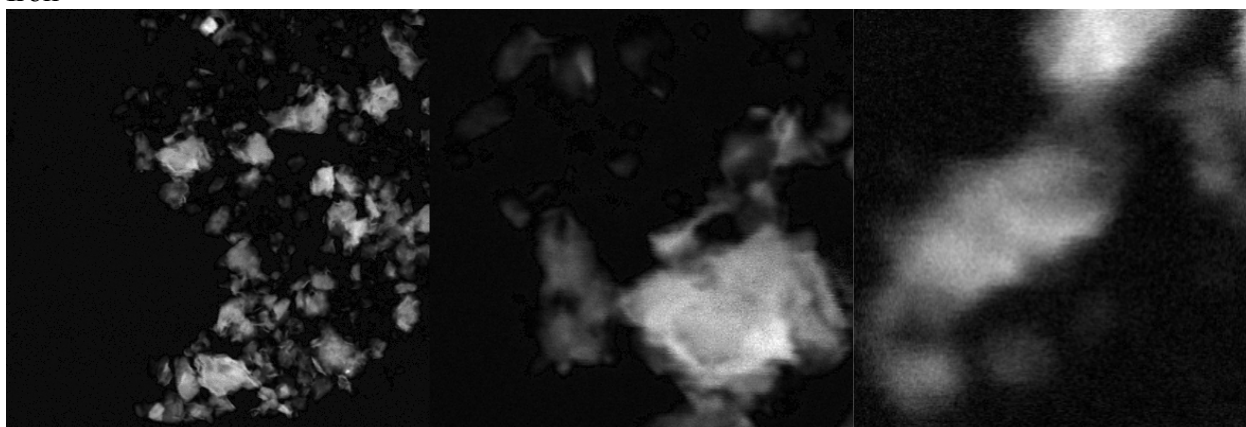


3. Raw STXM images for carbon (288.45-283 eV) and iron (709.7-703 eV)

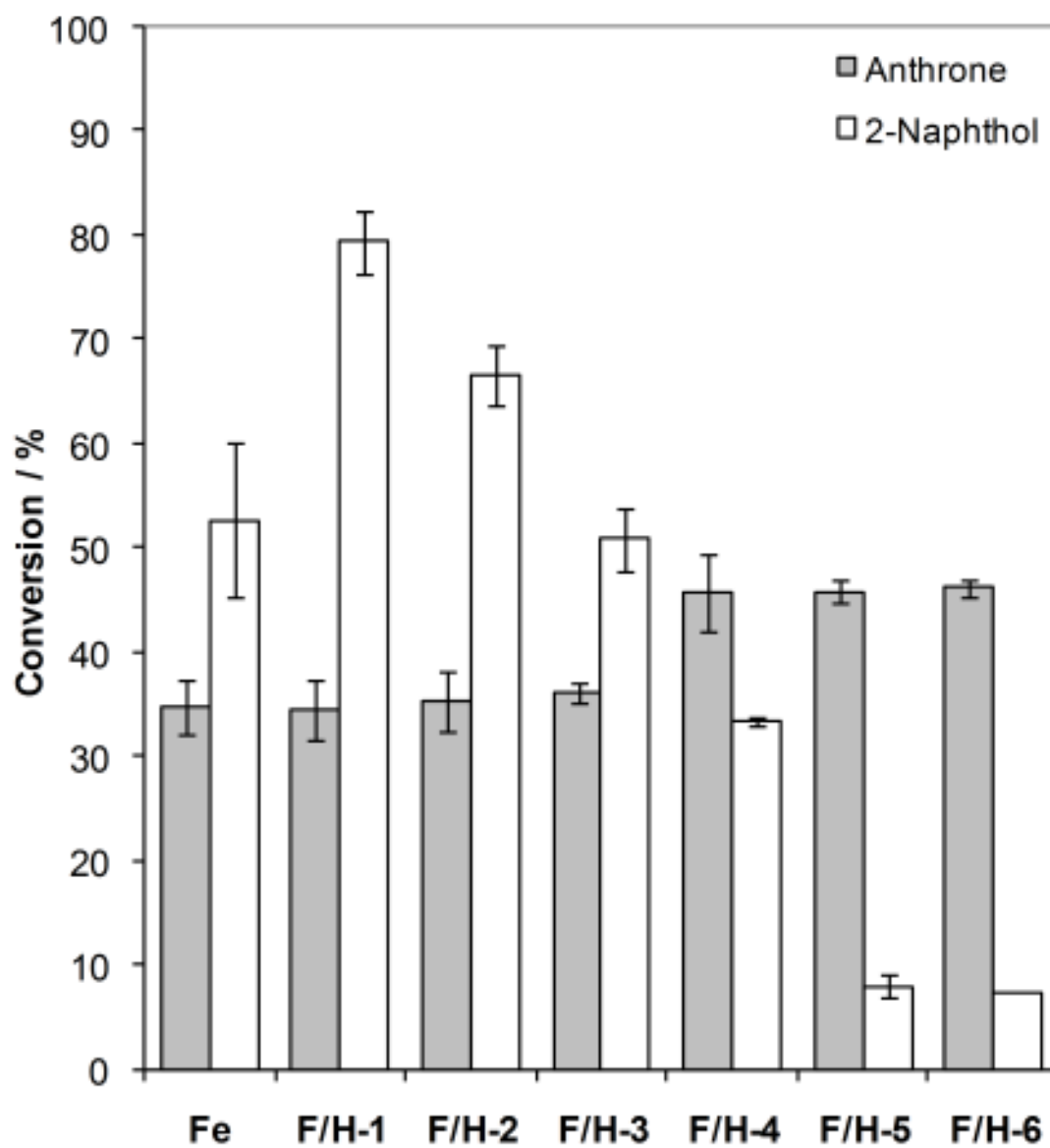
Carbon



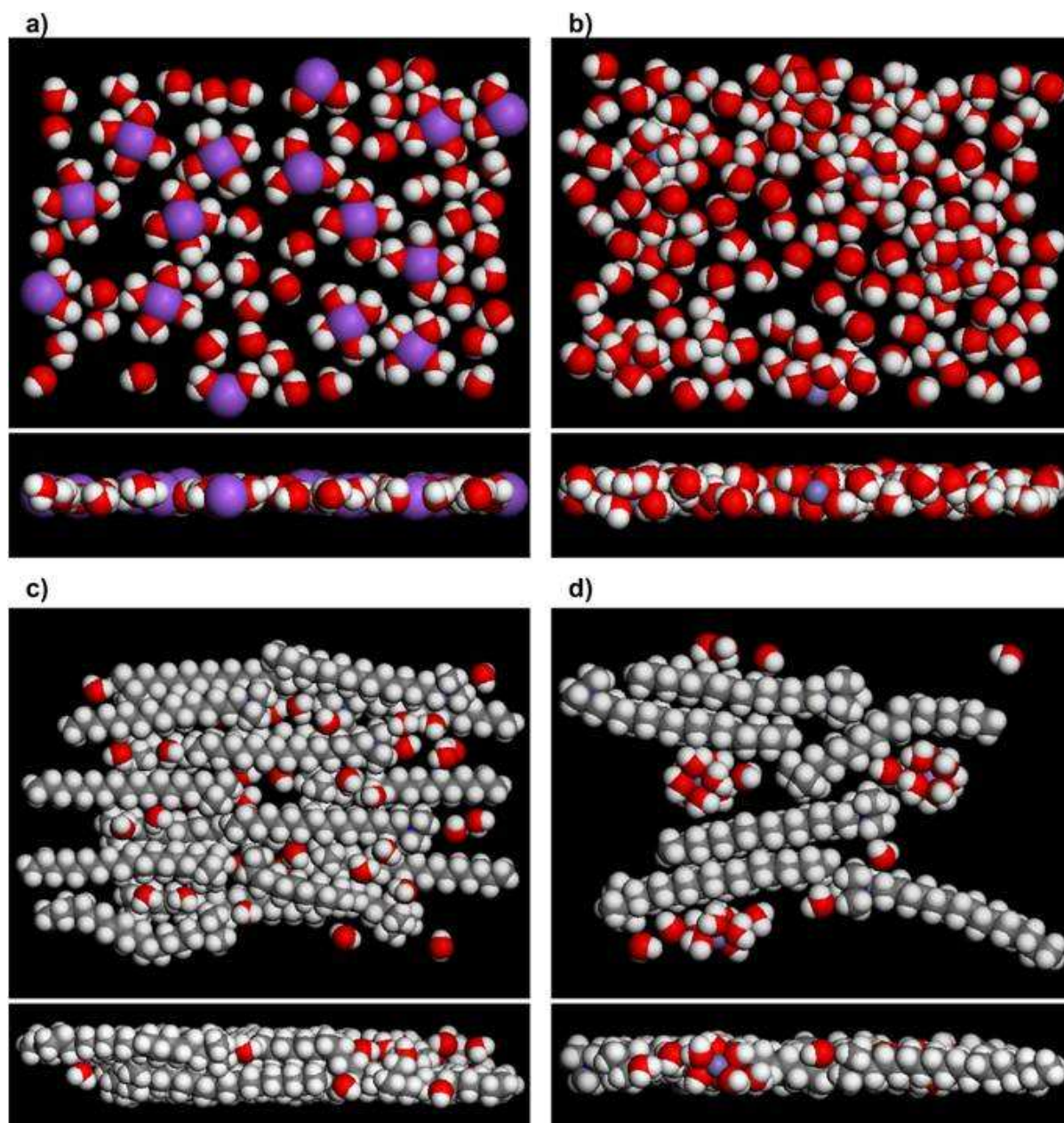
Iron



4. Conversion of 2-naphthol and anthrone promoted by Fe^{3+} SWy-2 and Fe^{3+} /HDTMA⁺ SWy-2 series at 360 minutes.



5. Snapshots of clay interlayers during dynamics simulations, showing top view and side view of a) Na^+ SWy-2, b) Fe^{3+} SWy-2, c) HDTMA^+ SWy-2 and d) $\text{Fe}^{3+}/\text{HDTMA}^+$ SWy-2.



6. Mean squared displacements of molecular models a) Na^+ in Na^+ SWy-2, b) Fe^{3+} in Fe^{3+} SWy-2, c) HDTMA^+ in HDTMA^+ SWy-2 and d) Fe^{3+} in $\text{Fe}^{3+}/\text{HDTMA}^+$ SWy-2.

