Composition and Transformation of Sulfur-, Nitrogen-, and Oxygen-containing Compounds in the Hydrotreating Process of a FCC Slurry Decant Oil

Haidong Li*[1,2], Xiu Chen*[1,2], Yahe Zhang[2], Quan Shi[2]

1. School of Chemistry and Chemical Engineering, Linyi University, Linyi 276000, People's Republic of China

2. State Key Laboratory of Heavy Oil Processing, China University of Petroleum, Beijing 102249, People's Republic of China

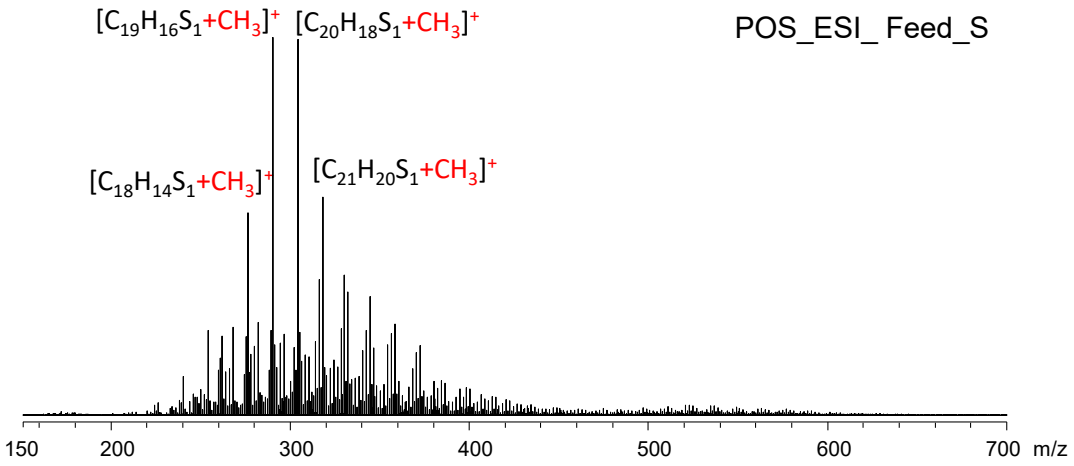

Figure S1. Broadband positive-ion ESI Orbitrap mass spectra of methyl derivatization products of the feed.

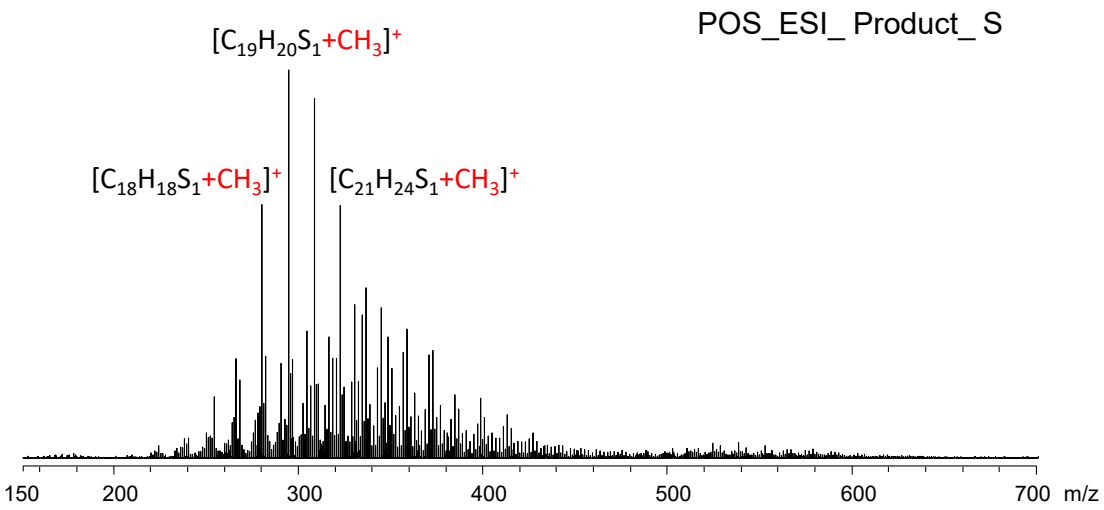

Figure S2. Broadband positive-ion ESI Orbitrap mass spectra of methyl derivatization products of the feed.

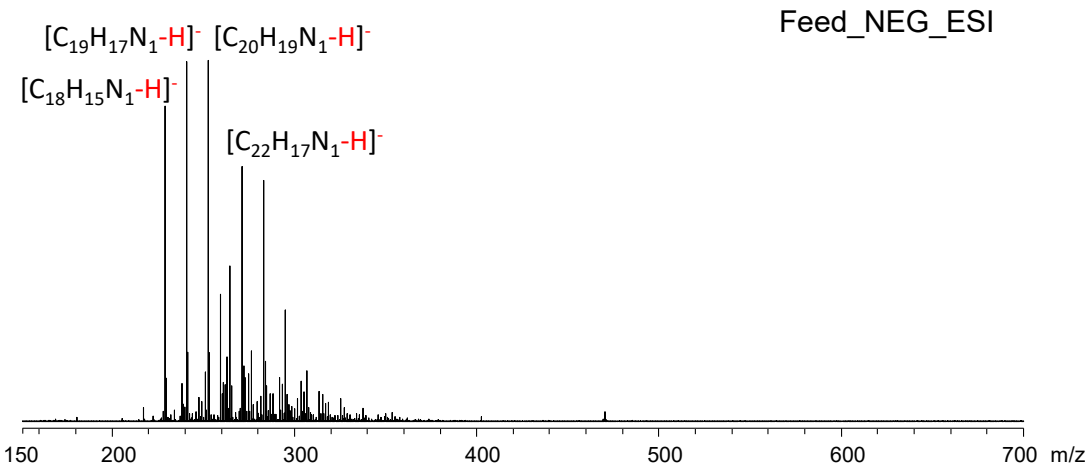

Figure S3. Broadband negative-ion ESI Orbitrap mass spectrum of the feed.

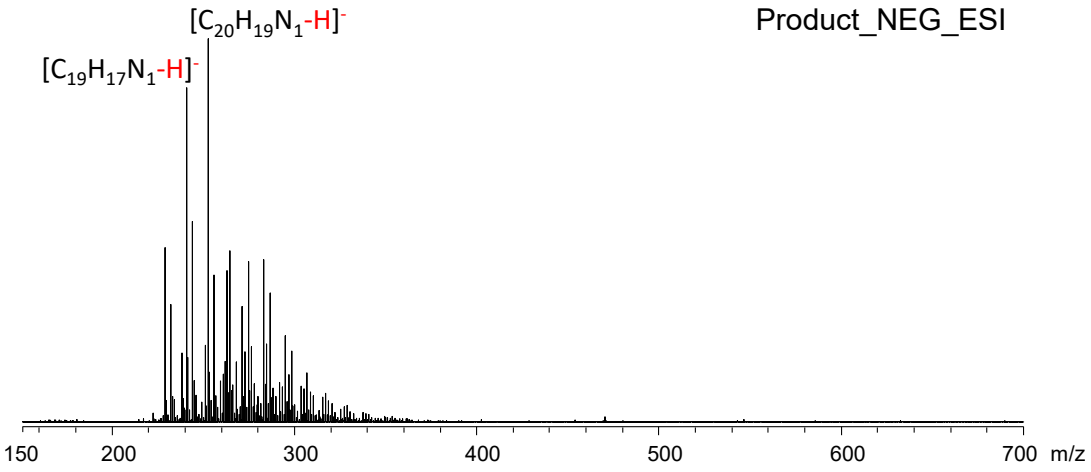

Figure S4. Broadband negative-ion ESI Orbitrap mass spectrum of the product.

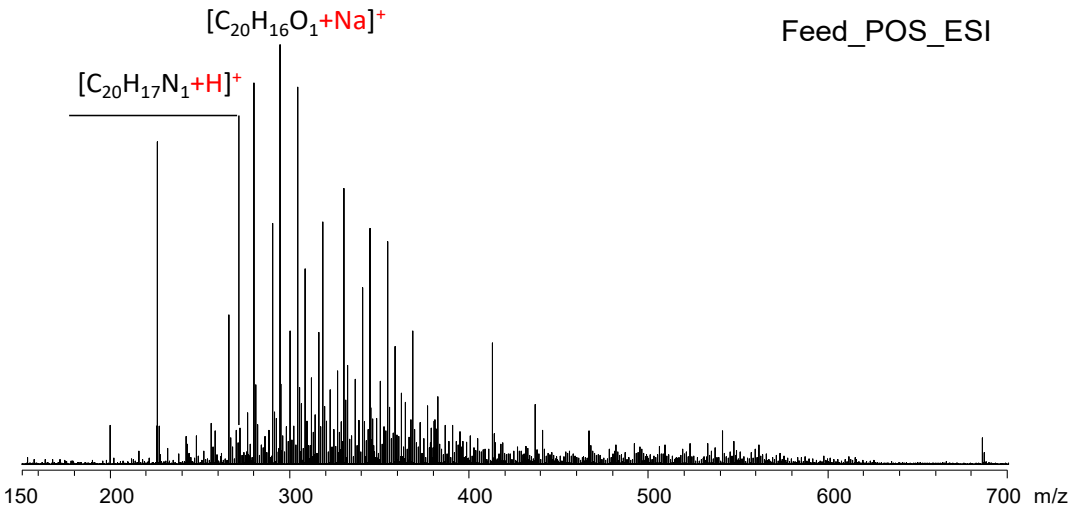

Figure S5. Broadband postive-ion ESI ORBITRAP mass spectrum of the feed.

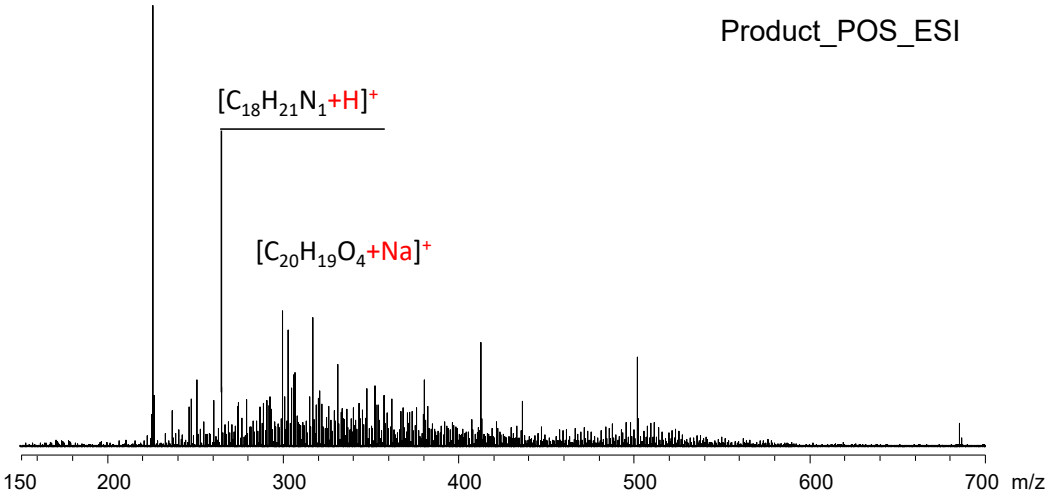

Figure S6. Broadband postive-ion ESI Orbitrap mass spectrum of the product.

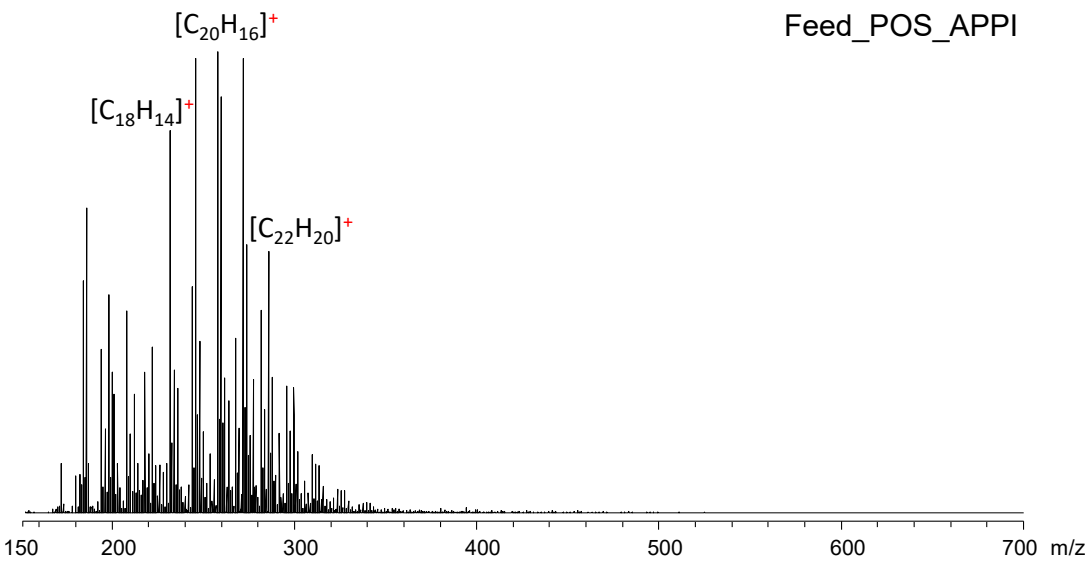

Figure S7. Broadband postive-ion APPI Orbitrap mass spectrum of the feed.

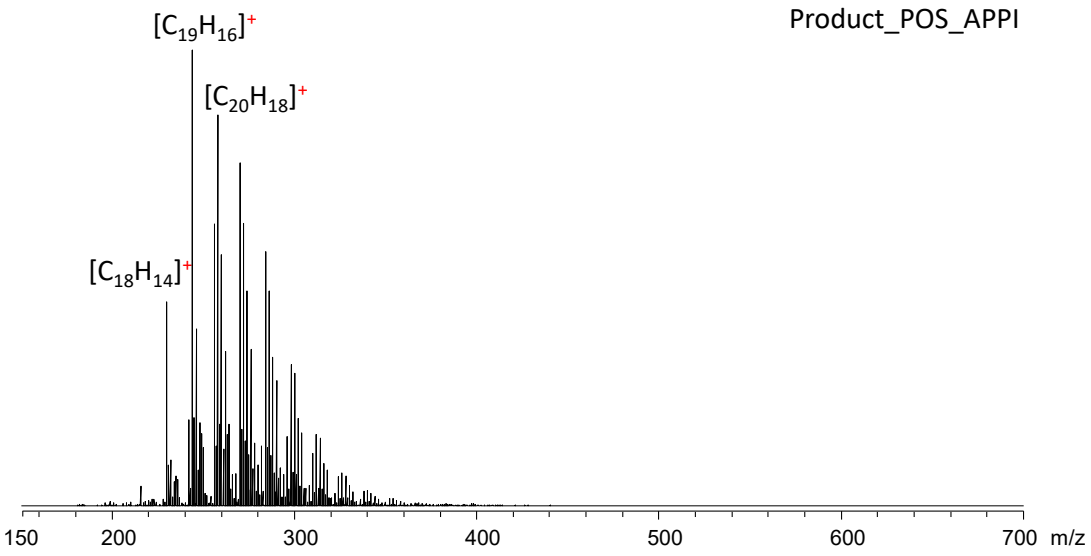

Figure S8. Broadband postive-ion APPI Orbitrap mass spectrum of the product.

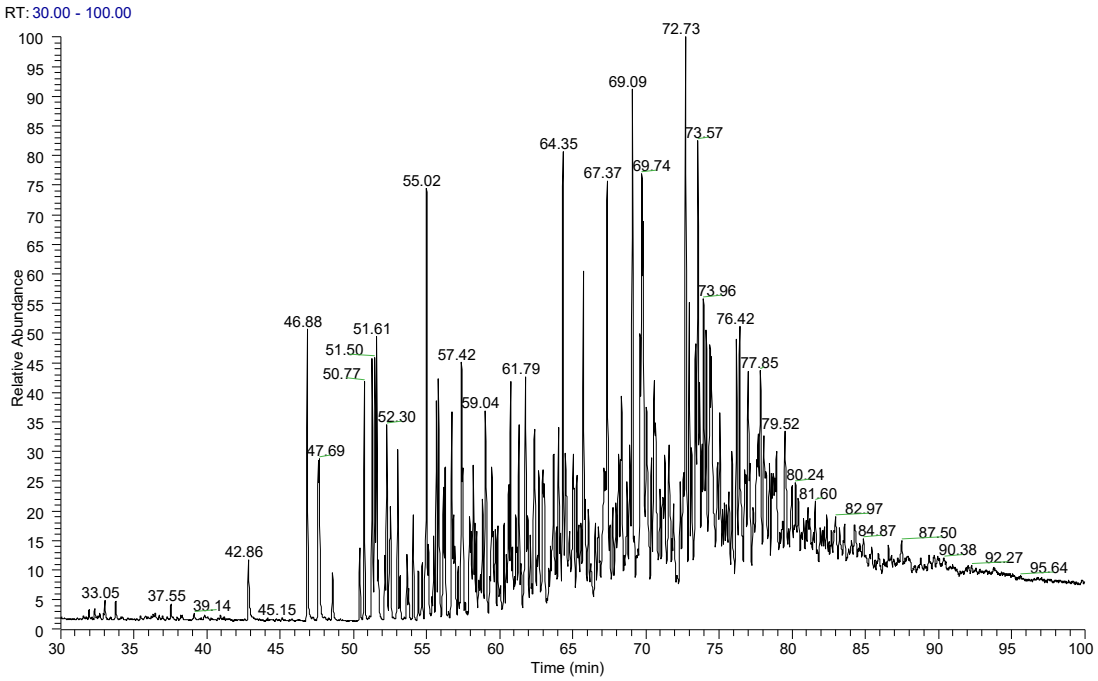

Figure S9. GC-MS chromatograms of sulfur-compounds in the feed.

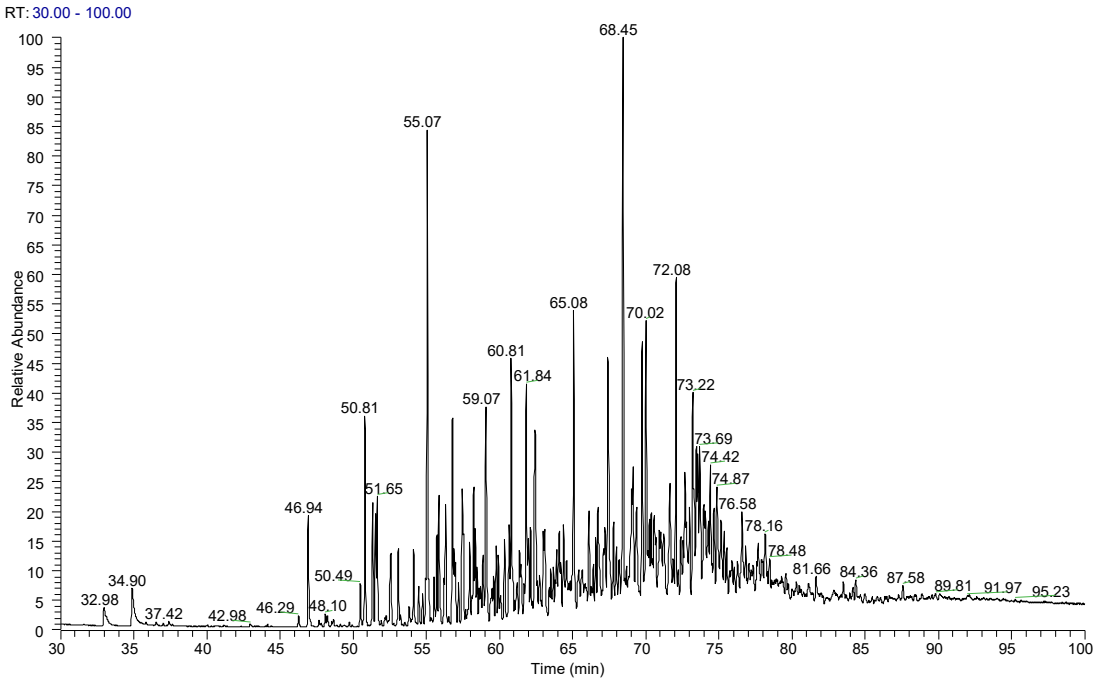

Figure S10. GC-MS chromatograms of sulfur-compounds in the hydrotreating product.