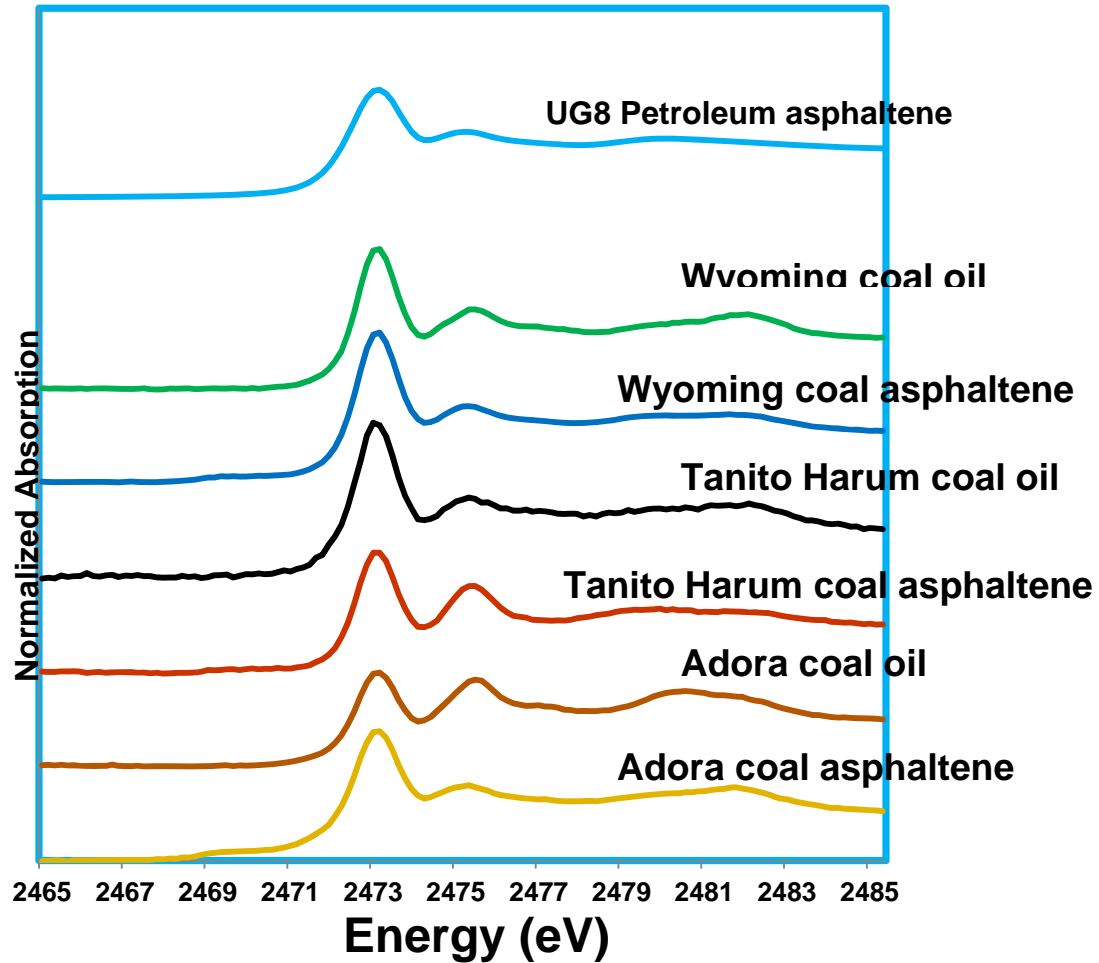


Sulfur X-ray Absorption Near Edge Spectroscopy (XANES) to ascertain the coal and petroleum fractions

XANES spectra of coal oil and asphaltenes and petroleum asphaltene



- XANES is very powerful in identifying and quantifying the different sulfur structures in fossil-fuels
- Asphaltenes, albeit being polar fractions, do not show any propensity for sulfoxide content
- The coal and petroleum asphaltenes are remarkably similar in their sulfur content
- Coal oil and coal asphaltenes have similar thiophene/sulfide ratios.
- Reference soil and humic and fulvic acid samples show large sulfur-oxygen content, large organic sulfide content, and no inorganic sulfide.