Supporting Information

Preliminary Characterization of Petroleum Sulfonates

Active Matter percentage (% AM) was determined by means of potentiometric titration protocols, according to the standard methods ASTM D 855-56. Petroleum sulfonates were primarily analyzed by infrared spectroscopy both Shimadzu Prestige 21 MIR-ATR. Prior to these analyses, the obtained petroleum sulfonate extracts were subjected to a dehydration, deoiling, and desalting procedure in order to avoid inaccurate observations caused by non-sulfonated hydrocarbon signals.[15,18] Figure S1 presents the petroleum sulfonates FTIR spectra after dehydration, deoilng and desalting according Basu and Harban.[15,18] Coherently with the results reported by Djedri *et. al.*[16], the *para*-sulfonic group was observed around 1176 cm^{-1} and 1045 cm^{-1}. Additionally, characteristic signals of methylene and methyle groups are observed in 2950 and 2850 cm^{-1}, and between 1450-1377 cm^{-1}.

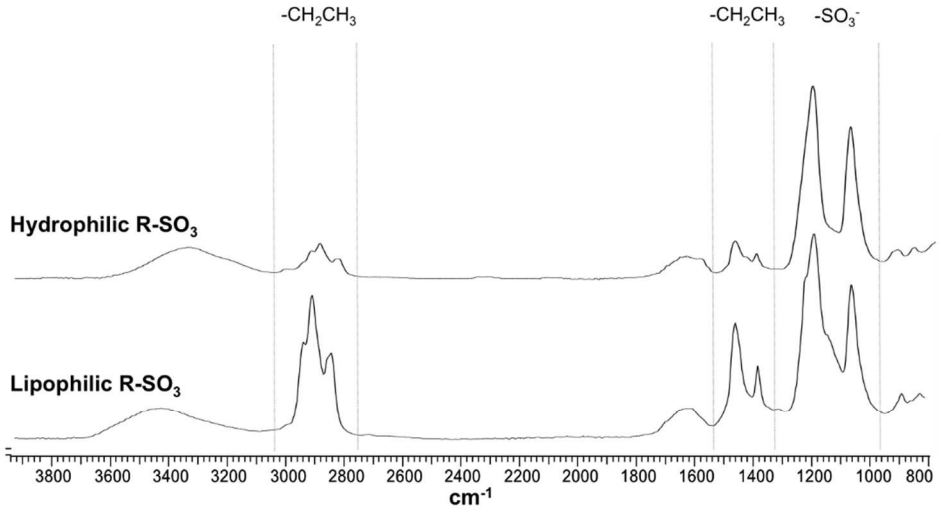

Figure S1. Infrared spectrums of hydrophilic and lipophilic petroleum sulfonates prepared from HVGO.

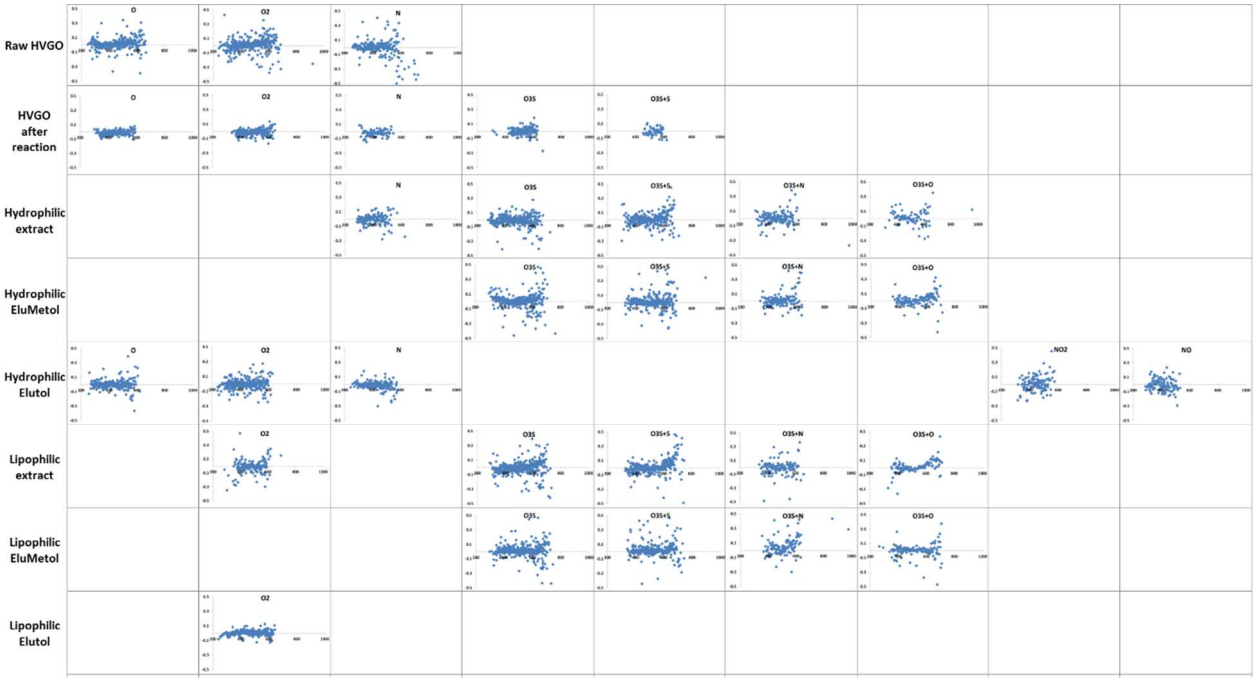

Figure S2. Distribution error graphs were the y axis is the error (ppm) and the x axis is the m/z for the classes detected by (-) ESI FT-ICR MS.