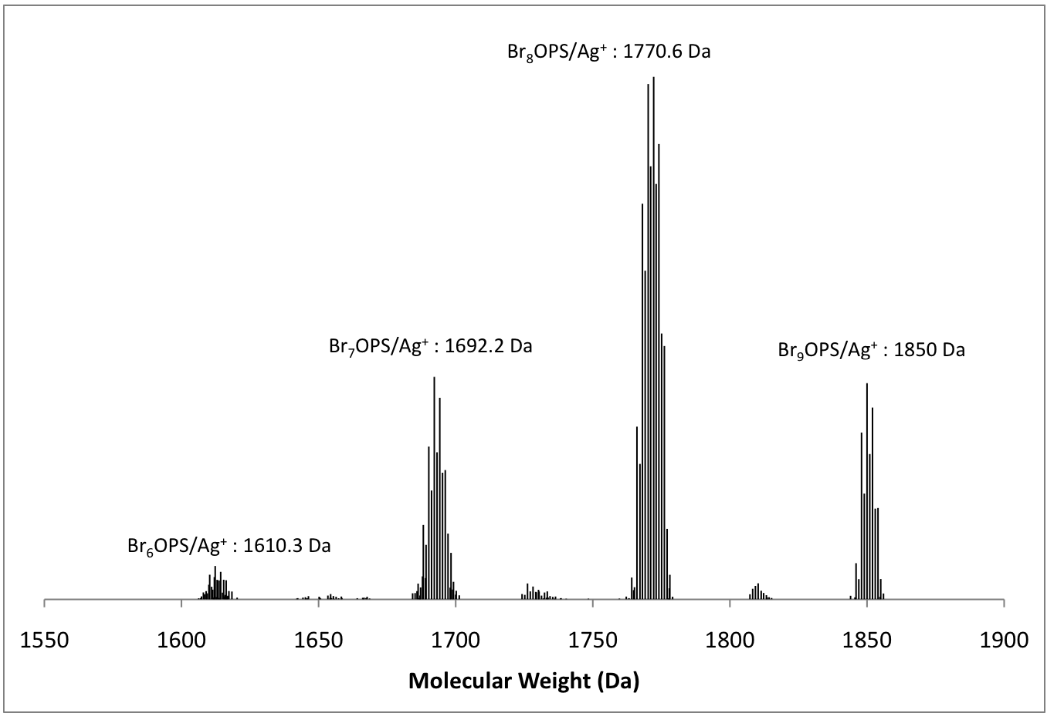


**Figure S.1** MALDI-TOF MS of octa(bromophenyl)silsesquioxane($Ag^+$/Dithranol).

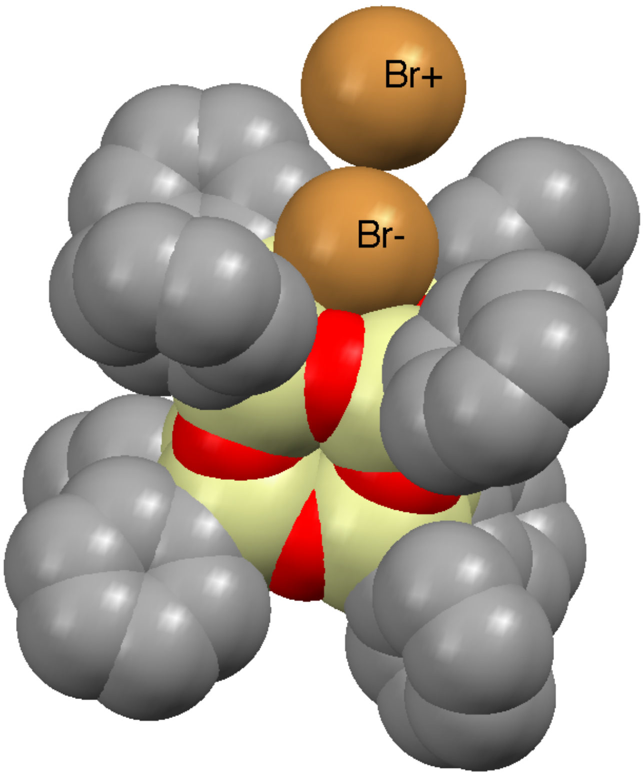


**Figure S.2** Proposed complexation of bromide ion with silsesquioxane cage face.

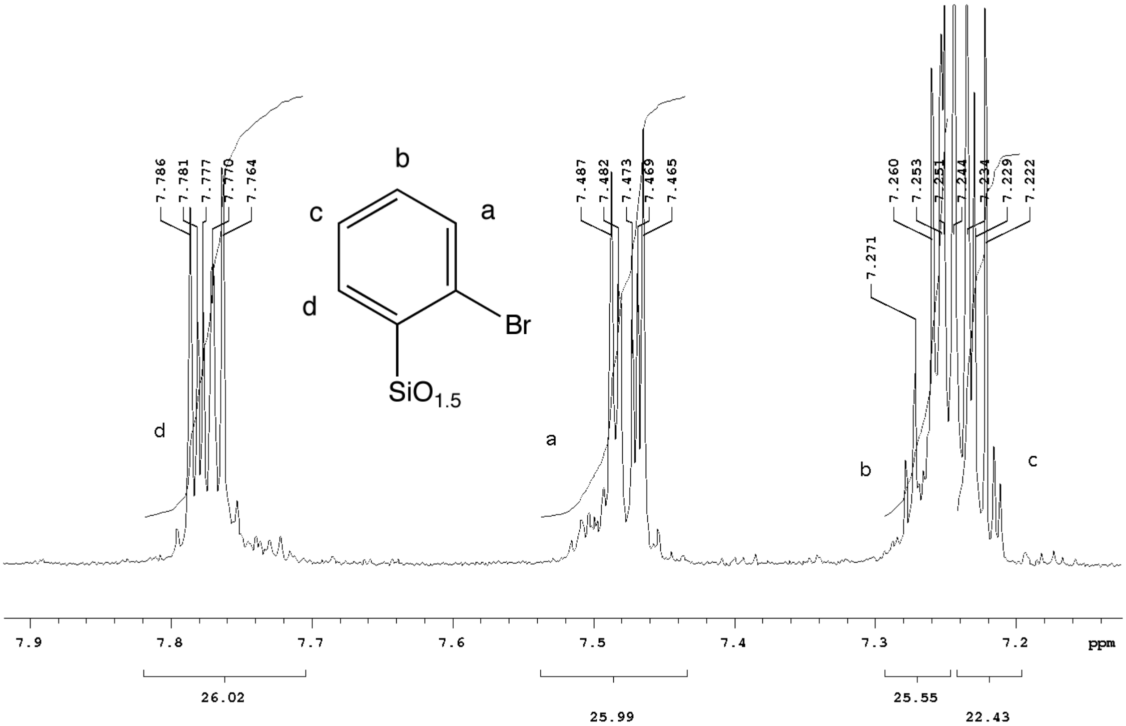


**Figure S.3** [1]H NMR spectrum of octa(*o*-bromophenyl)silsesquioxane in $CS_2/CDCl_3$

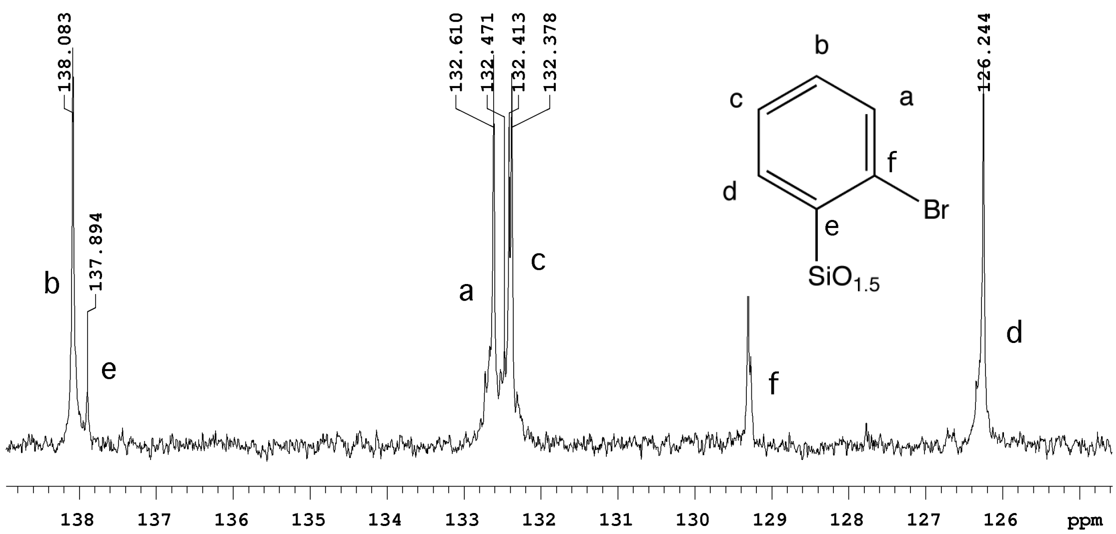


**Figure S.4** [13]C NMR spectrum of octa(*o*-bromophenyl)silsesquioxane in $CS_2/CDCl_3$.

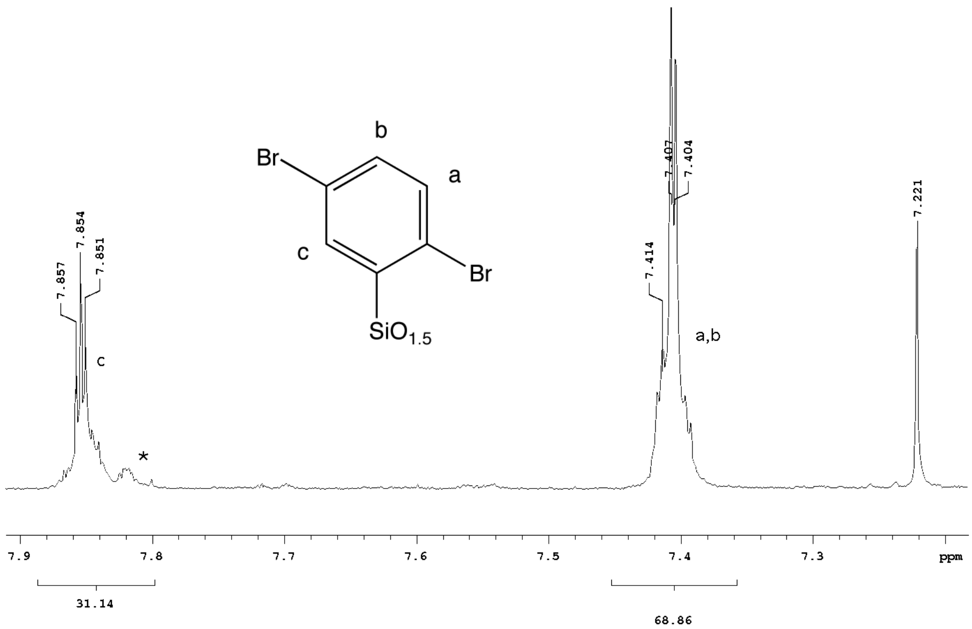


**Figure S.5** $^1$H NMR spectrum of octa(2,5-dibromobromophenyl)silsesquioxane in $CS_2/CDCl_3$.

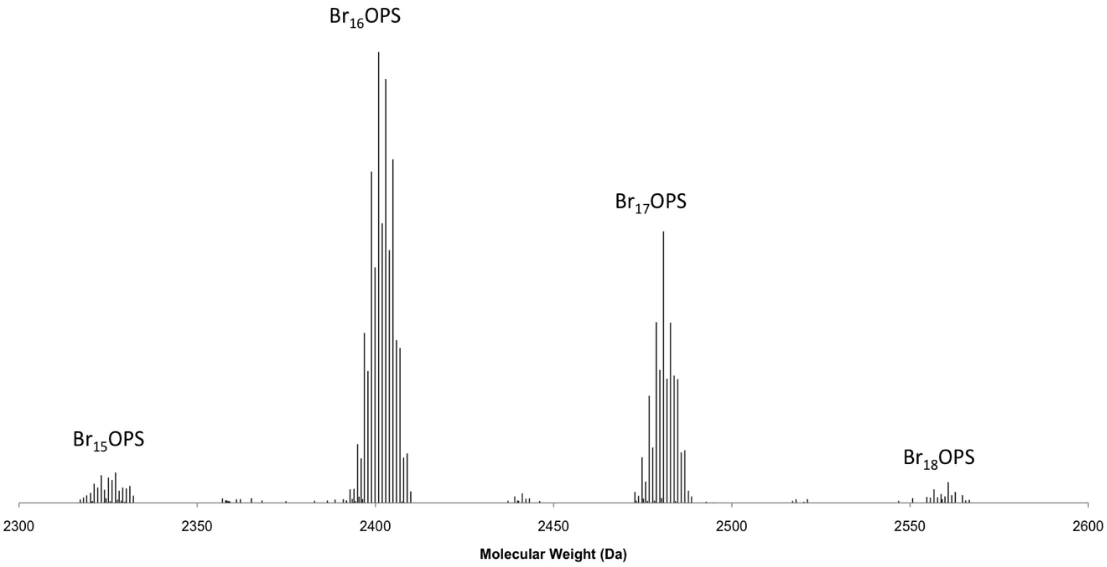


**Figure S.6** MALDI-TOF MS of amorphous $Br_{16}OPS$. ($Ag^+$/Dithranol).

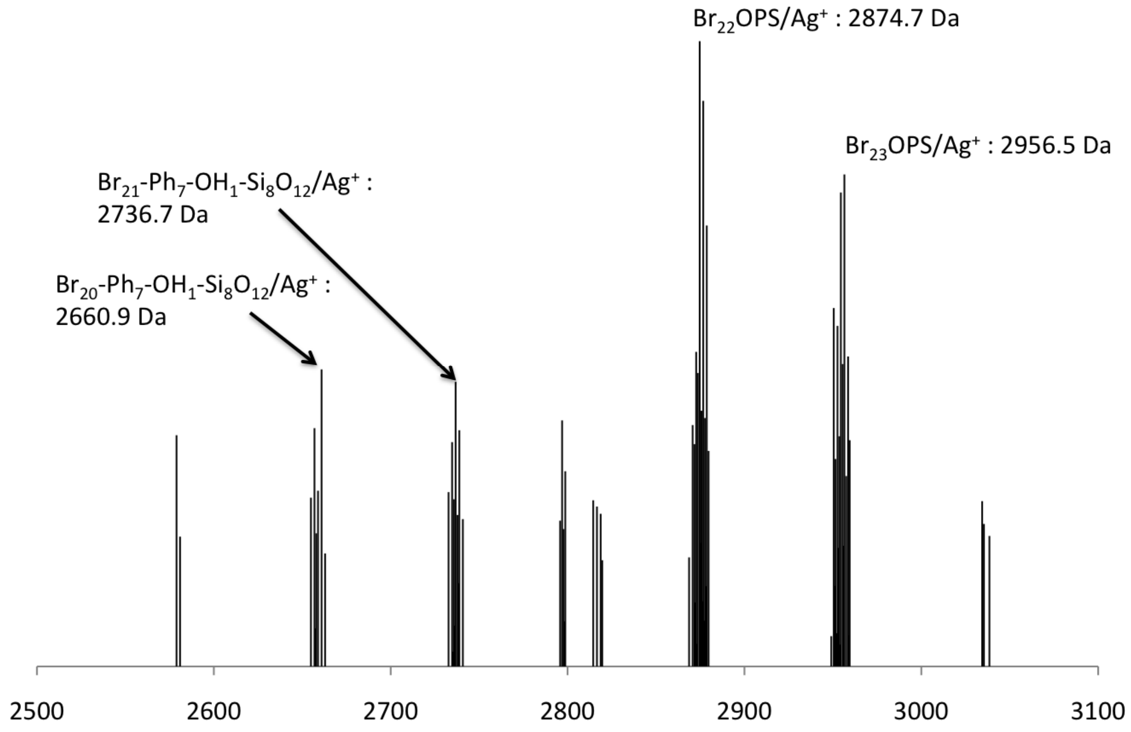


**Figure S.7** MALDI-TOF MS showing corner cleavage during bromination. ($Ag^+$/Dithranol).

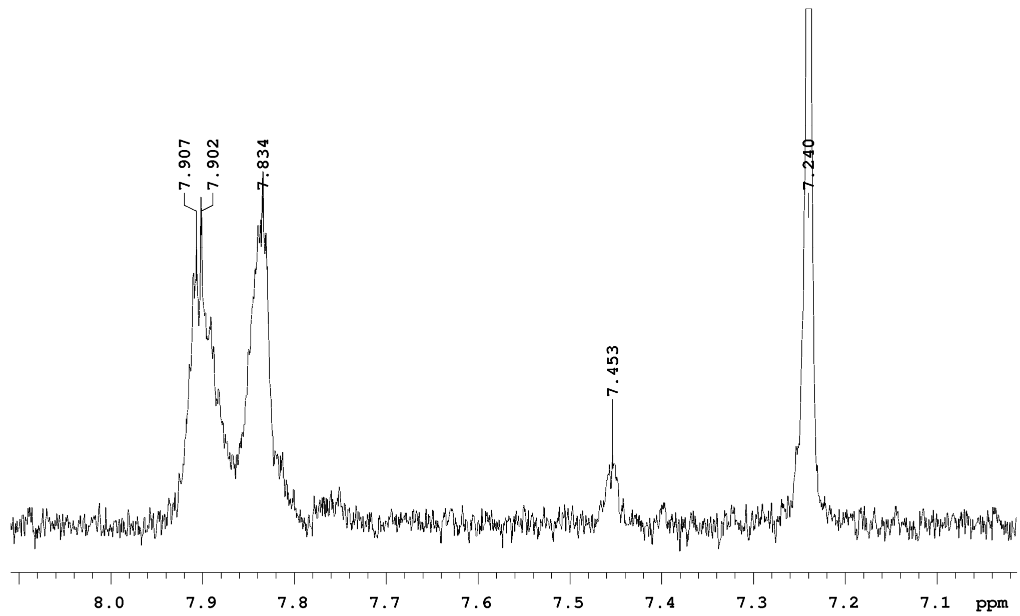


**Figure S.8** $^1H$ NMR spectrum of tetraicosabrominated OPS in $CS_2/CDCl_3$

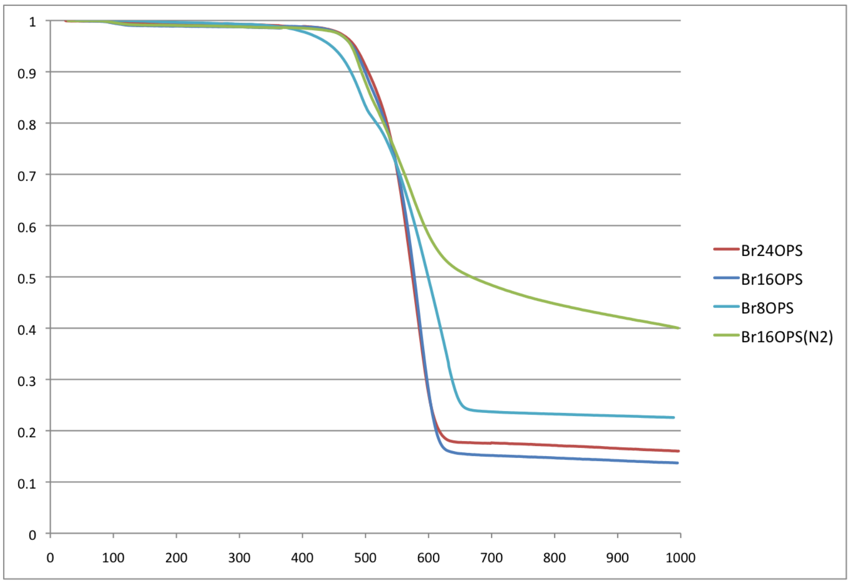


**Figure S.9.** TGAs of brominated OPS derivatives in air. Table **4** lists the ceramic yields.

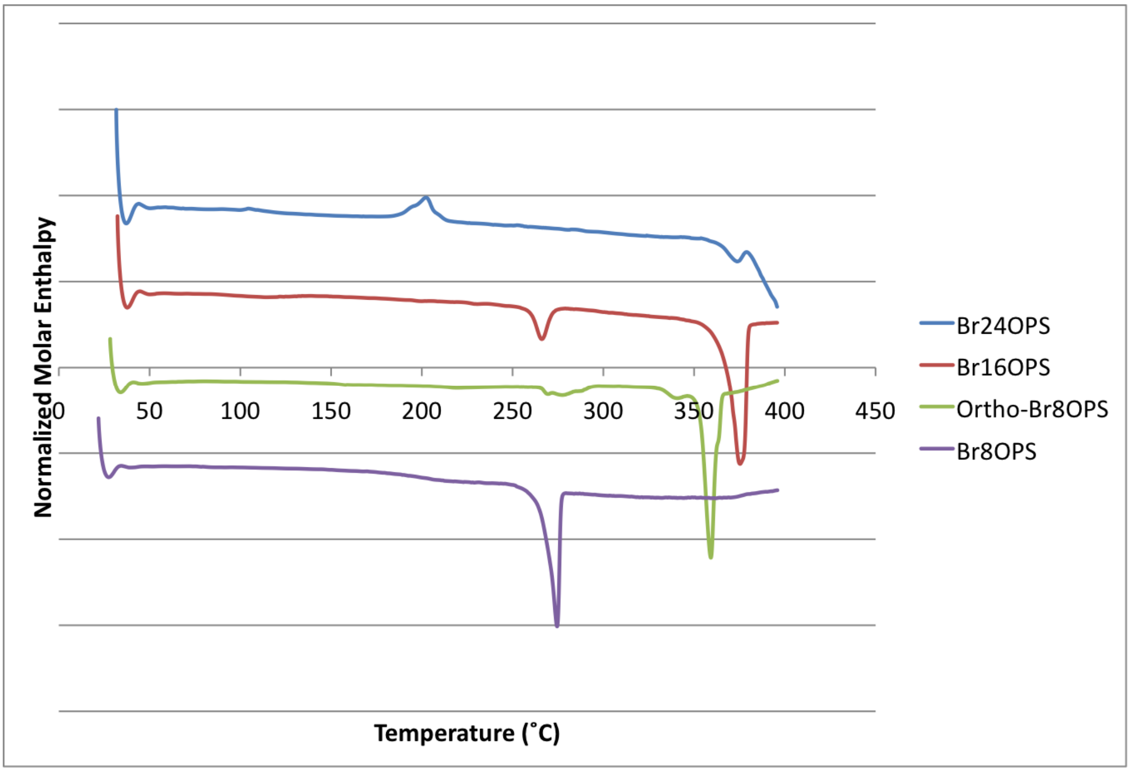


**Figure S.10.** DSC traces of brominated OPS derivatives, showing melting of the crystalline phases.

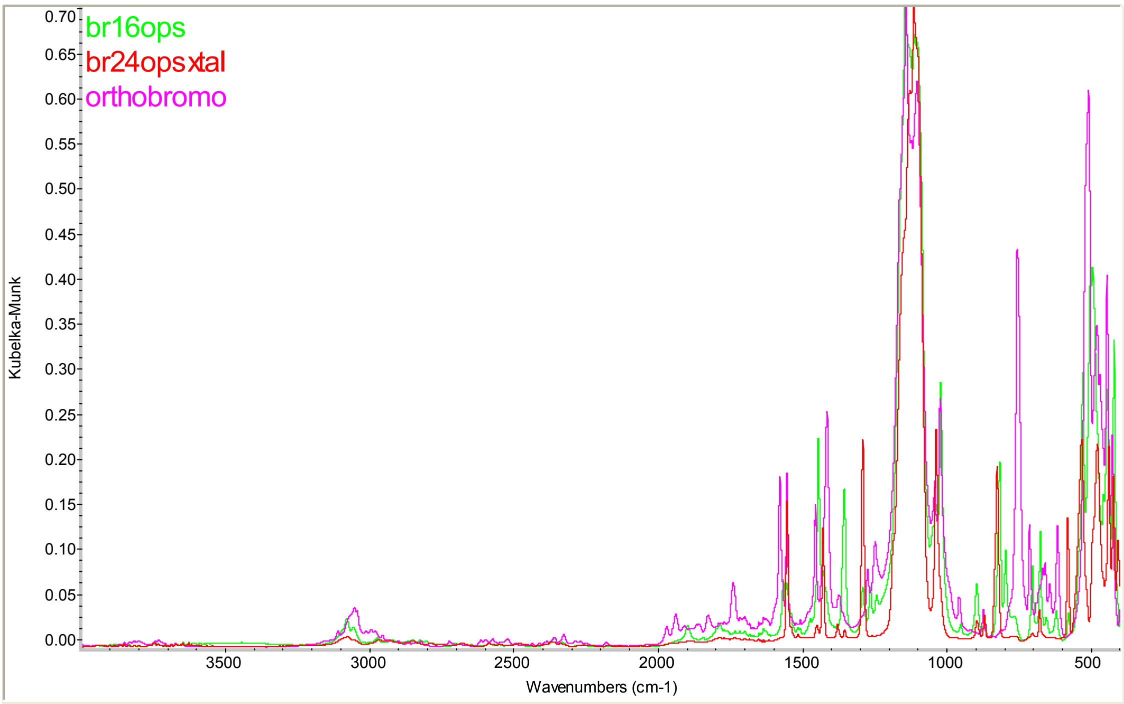


**Figure S.11.** FTIR spectra of brominated OPS derivatives, 3200-400 $cm^{-1}$.

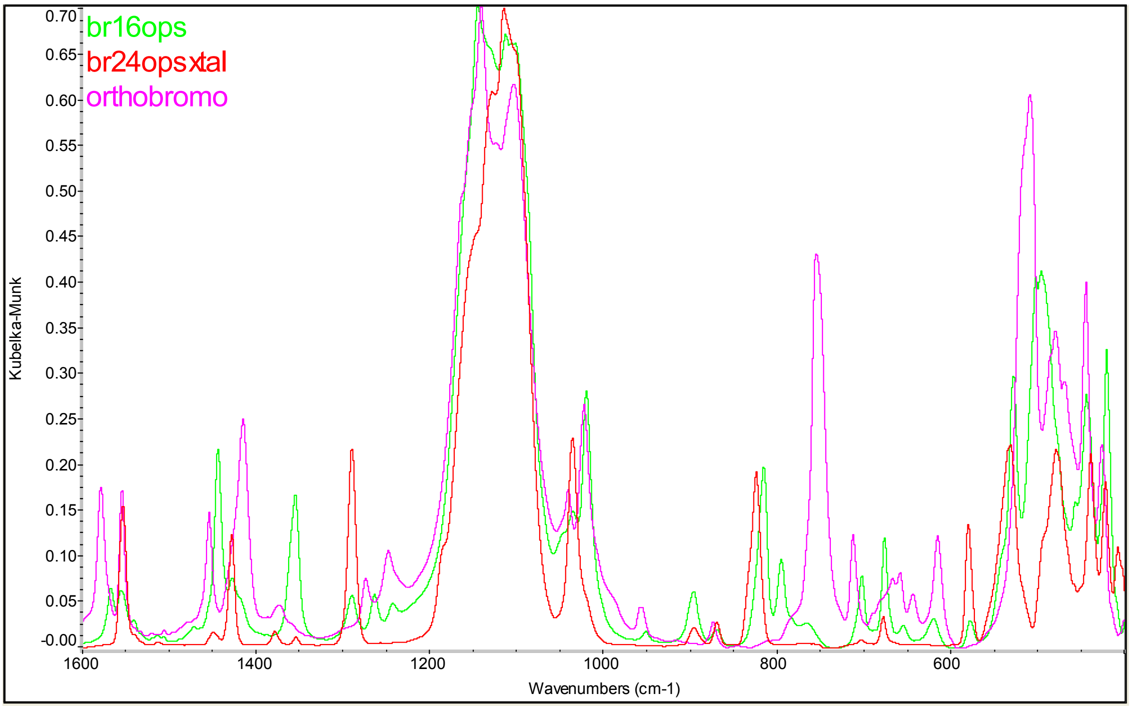


**Figure S.12.** FTIR spectra of brominated OPS derivatives 1600-400 $cm^{-1}$.