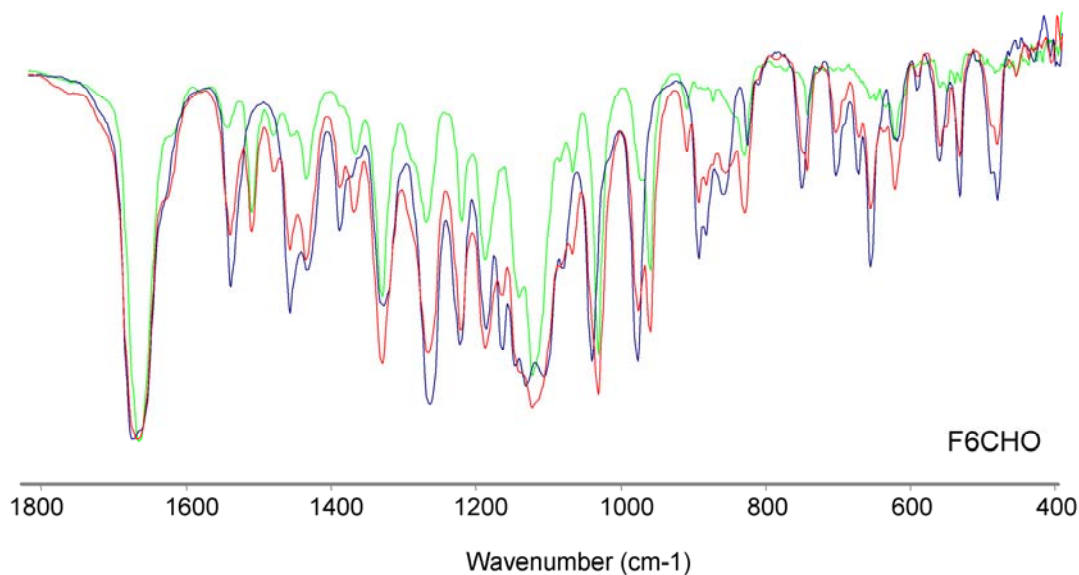


Raman scattering and FT-IR spectroscopic studies on Dithienylethene Switches – towards non-destructive optical readout

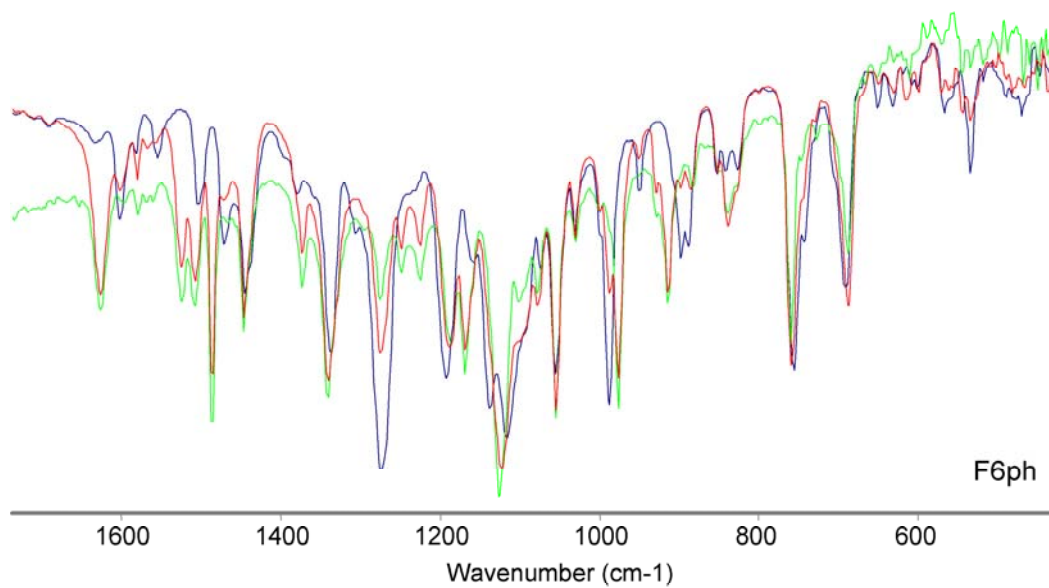
Jaap J.D. de Jong, Wesley R. Browne, Martin Walko, Linda N. Lucas, Lindsay J. Barrett, John J. McGarvey, Jan H. van Esch, and Ben L. Feringa*

Supporting Online Information

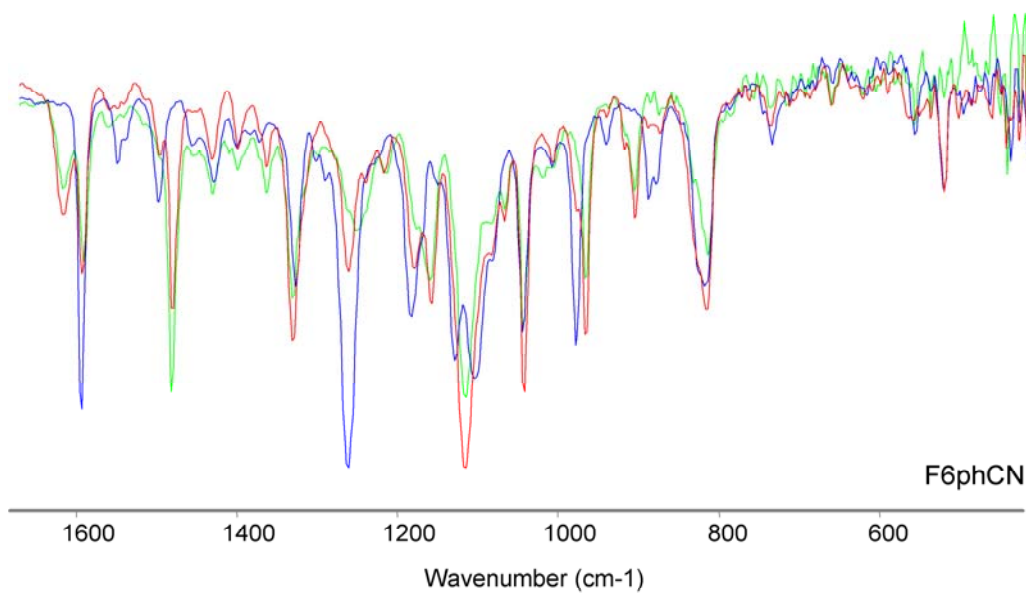
IR data for compounds **1-4F** and **1-12H** was obtained (SOM-figure 1-16). Due to the low Photostationary states achievable for **9-10H**, only the open form IR data is shown. For other compounds spectra were obtained starting from the open (blue) and subsequent irradiation with UV light ($\lambda = 313\text{nm}$). Also, the closed form could be obtained by irradiation of acetonitrile solutions and deposition on KBr (green).



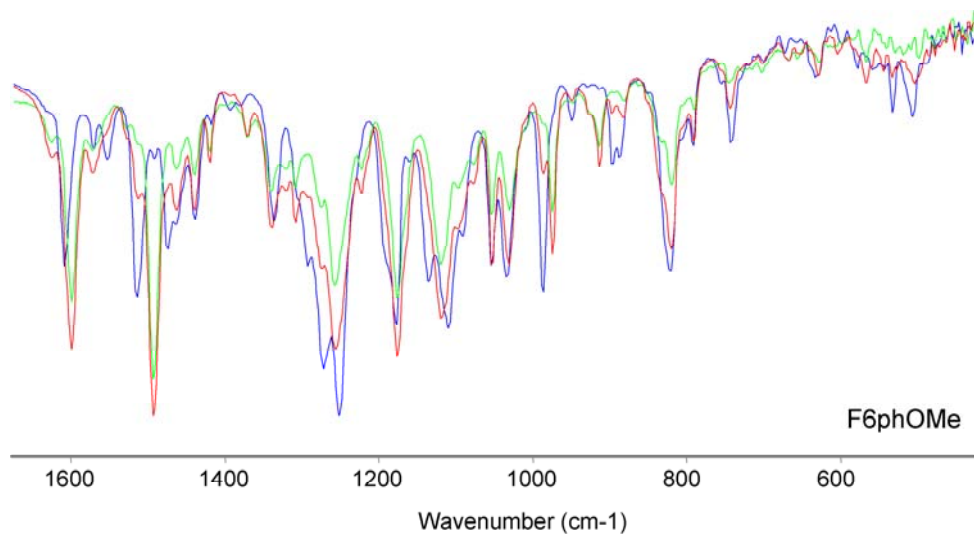
SOM Figure 1 FT-IR for compound **1F**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



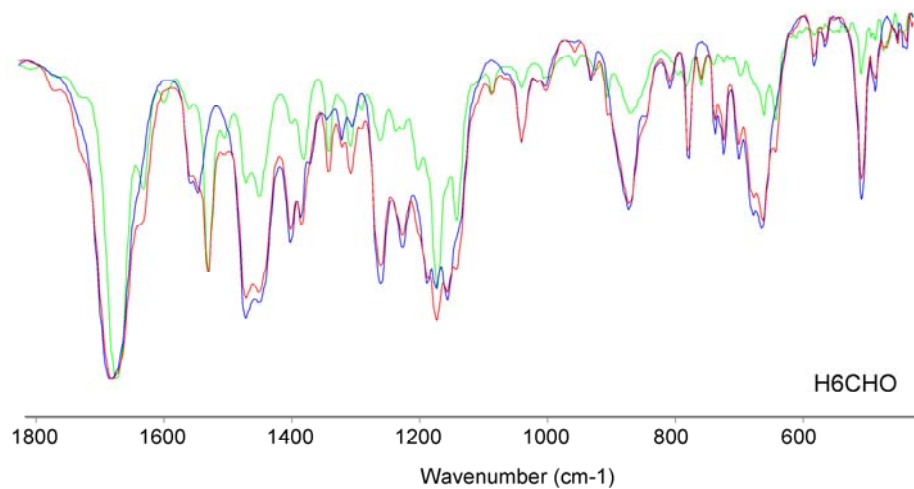
SOM Figure 2 FT-IR for compound **2F**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



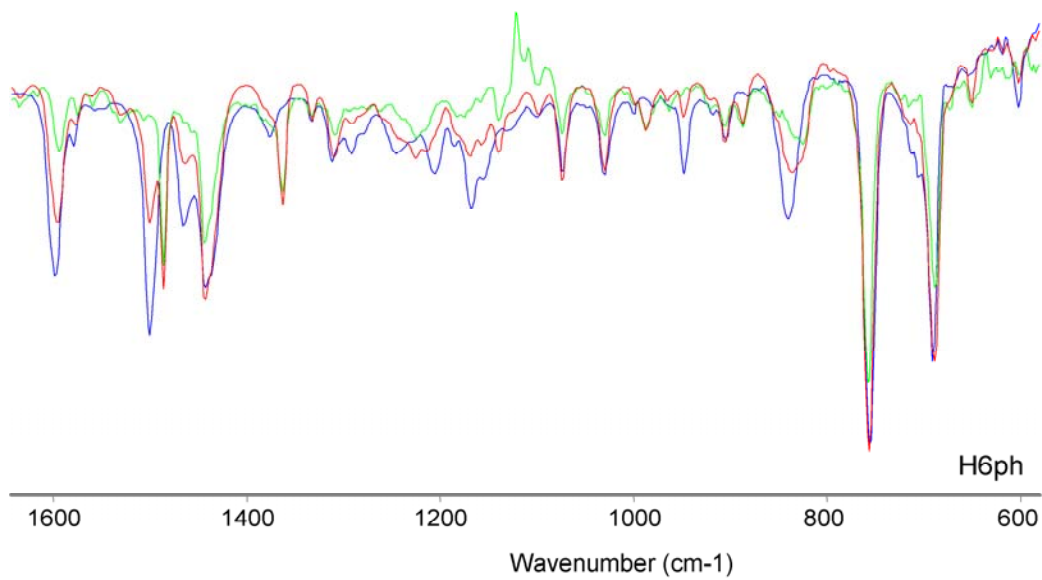
SOM Figure 3 FT-IR for compound **3F**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



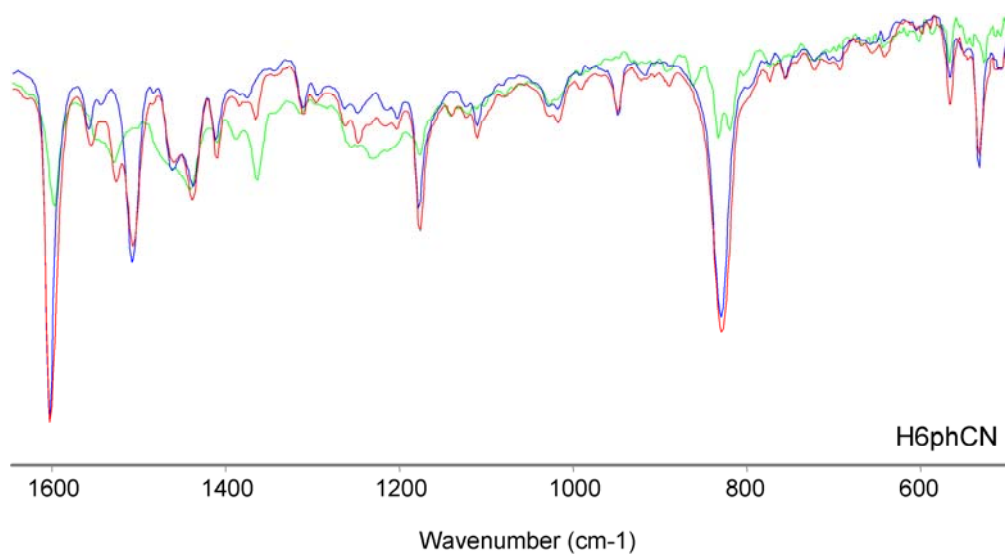
SOM Figure 4 FT-IR for compound **4F**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



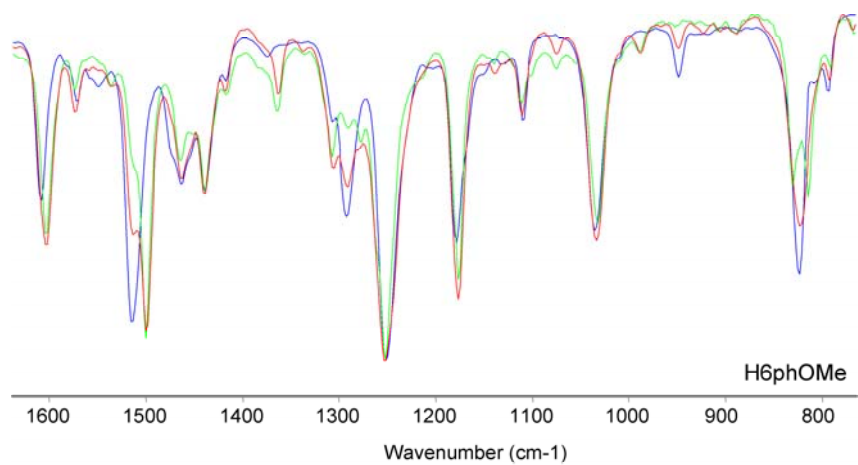
SOM Figure 5 FT-IR for compound **1H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



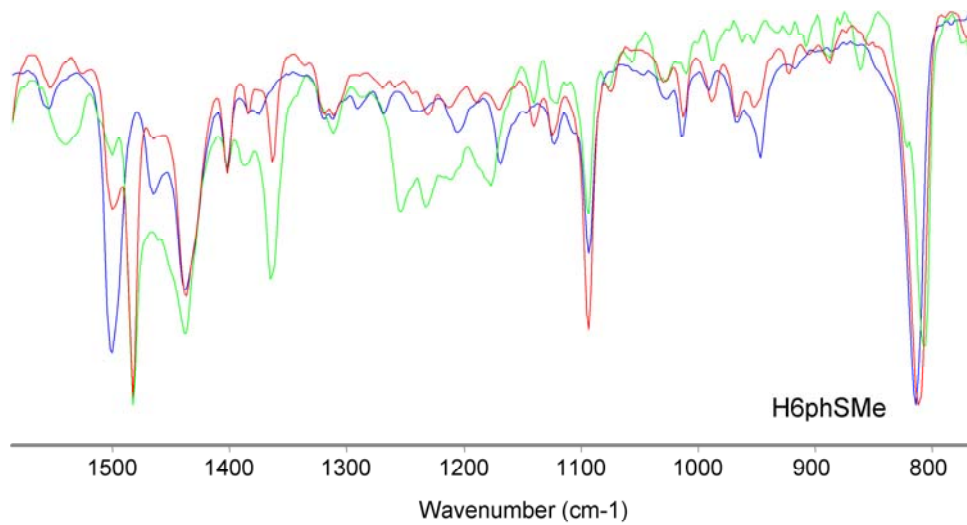
SOM Figure 6 FT-IR for compound **2H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



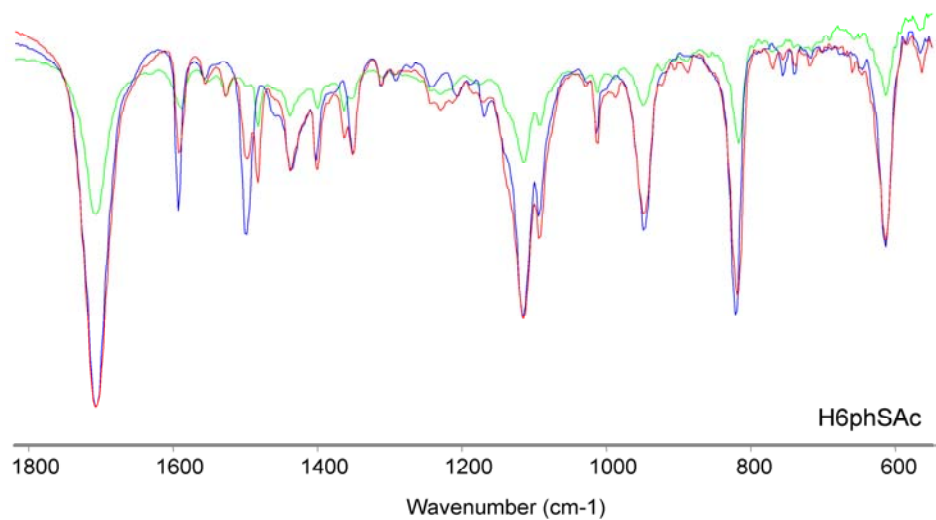
SOM Figure 7 FT-IR for compound **3H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



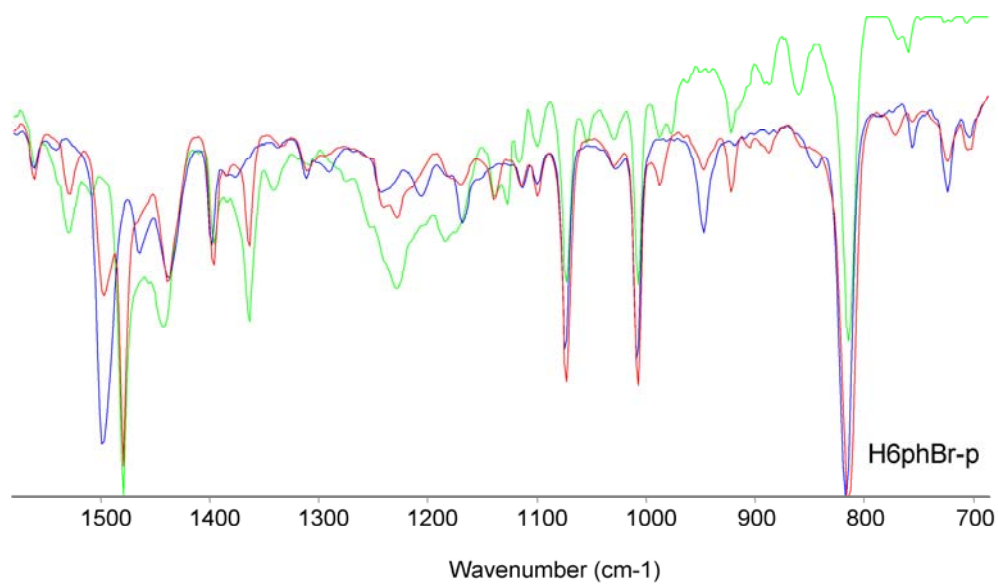
SOM Figure 8 FT-IR for compound **4H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



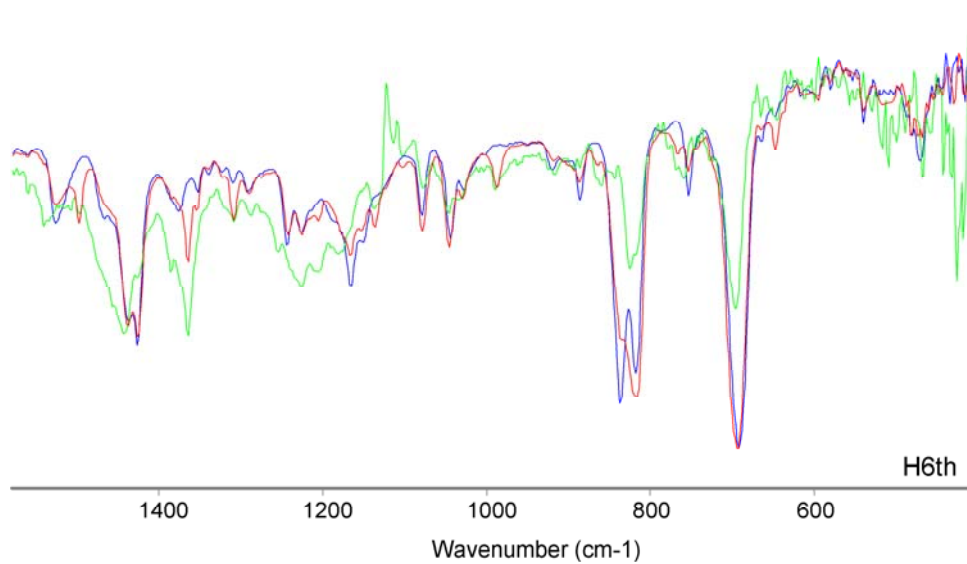
SOM Figure 9 FT-IR for compound **5H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



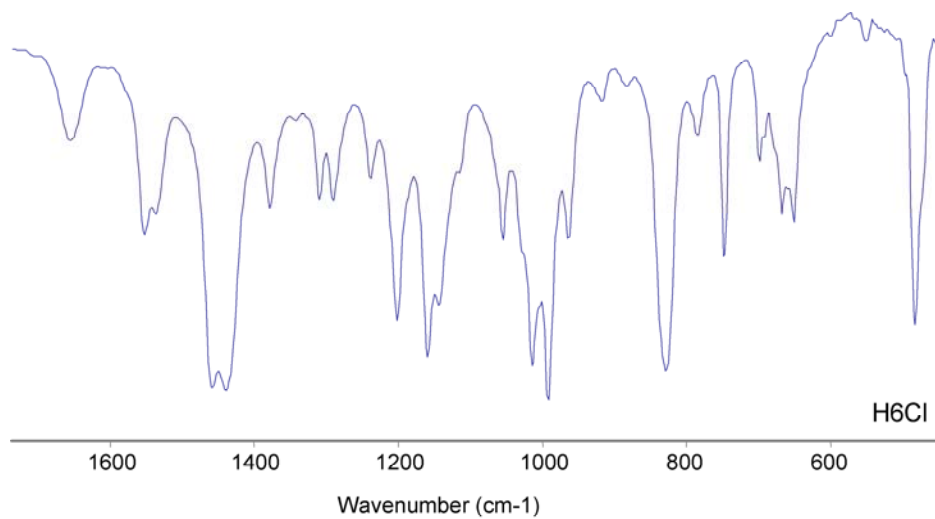
SOM Figure 10 FT-IR for compound **6H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



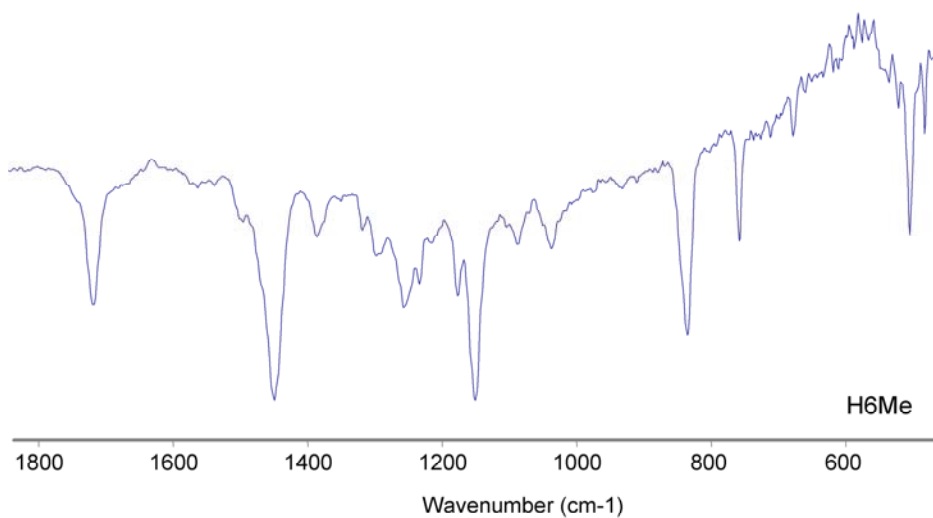
SOM Figure 11 FT-IR for compound **7H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



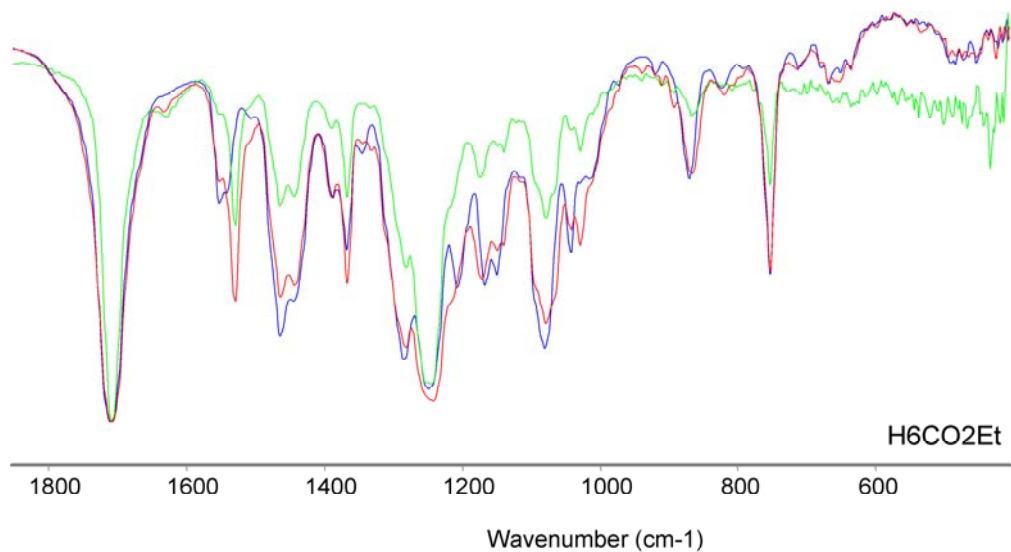
SOM Figure 12 FT-IR for compound **8H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.



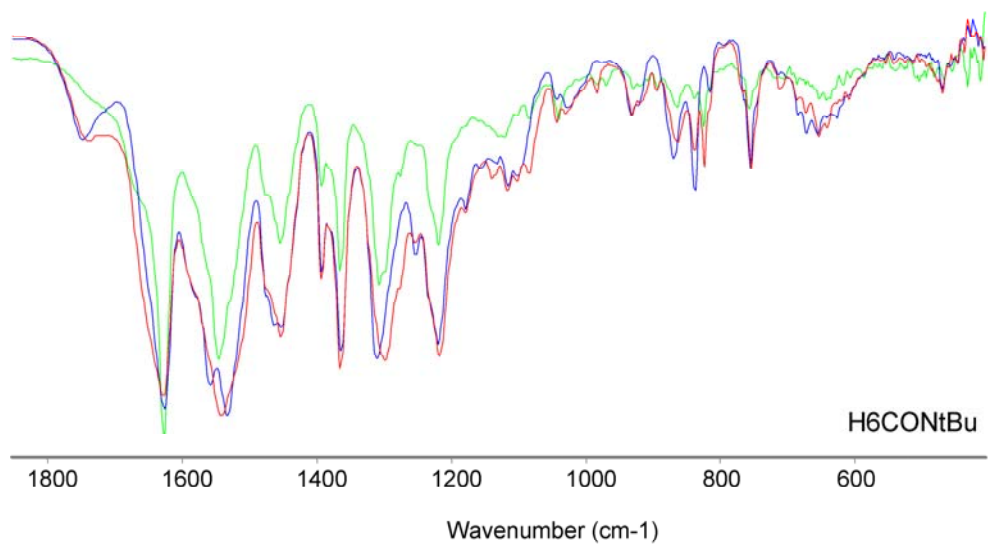
SOM Figure 13 FT-IR for compound **9Ho**.



SOM Figure 14 FT-IR for compound **10H_o**.

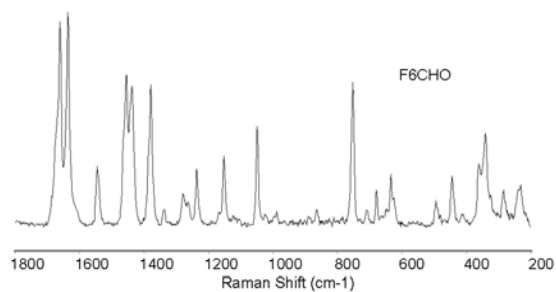


SOM Figure 15 FT-IR for compound **11H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

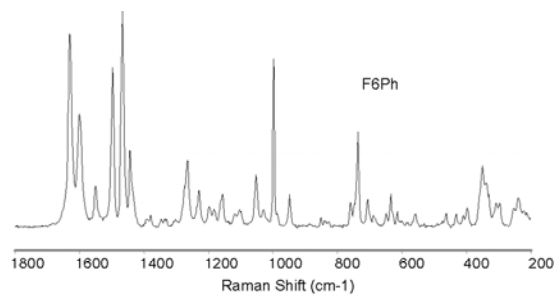


SOM Figure 16 FT-IR for compound **12H**. blue = open form, red = PSS starting from open form, green = prior irradiation to the closed form in acetonitrile and subsequent casting on KBr.

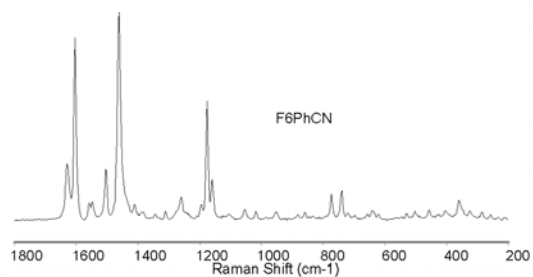
RAMAN data for **1-4Fo** and **1-4** & **6-10Ho** for the open form in the solid state.



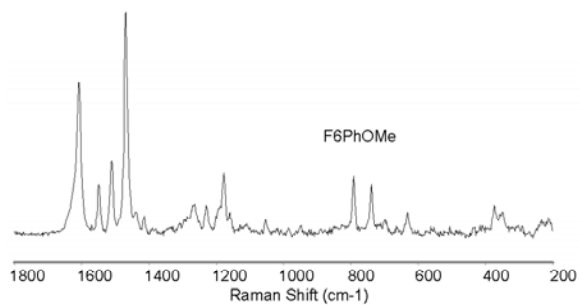
SOM Figure 17 1F on solid state Raman



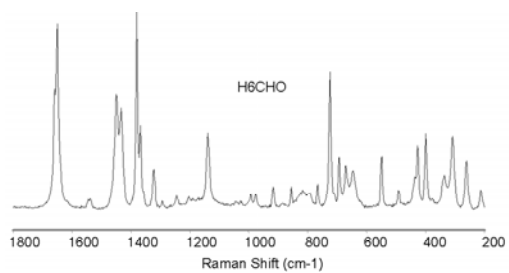
SOM Figure 18 2F on solid state Raman



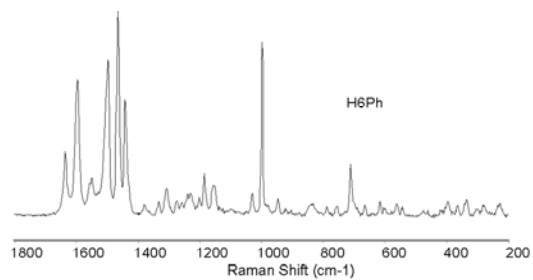
SOM Figure 19 3F on solid state Raman



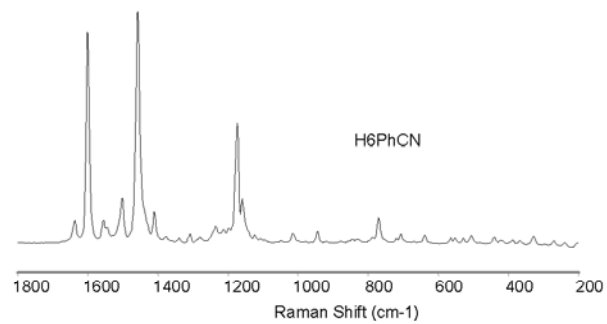
SOM Figure 20 4F on solid state Raman



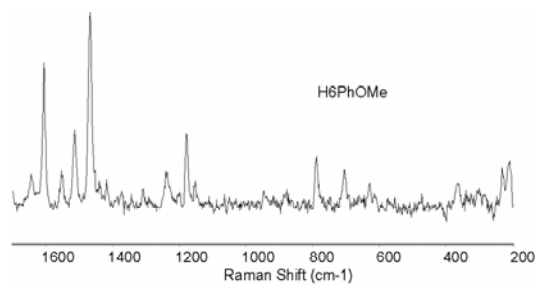
SOM Figure 21 1H on solid state Raman



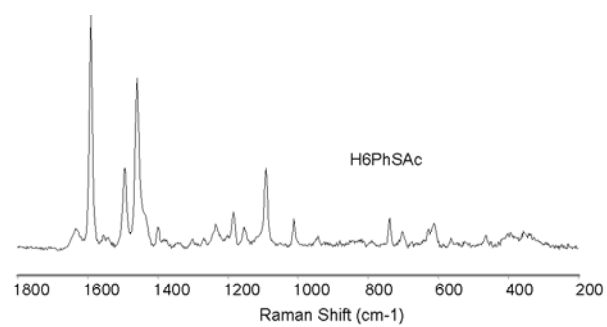
SOM Figure 22 2H on solid state Raman



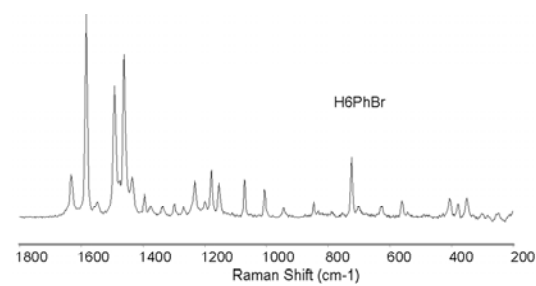
SOM Figure 23 3H on solid state Raman



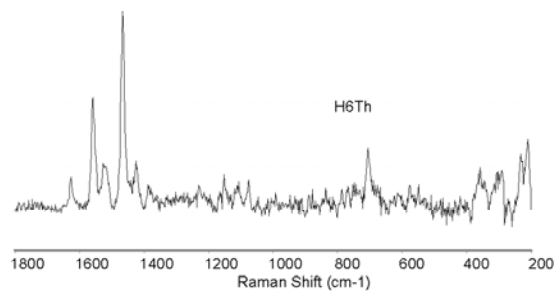
SOM Figure 24 4H on solid state Raman



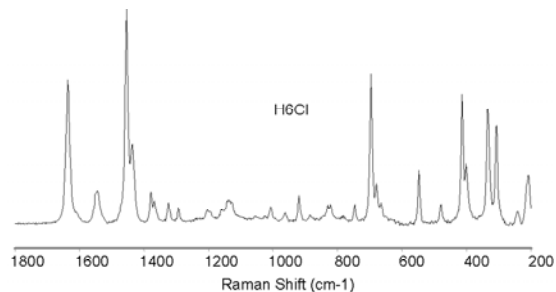
SOM Figure 25 6H on solid state Raman



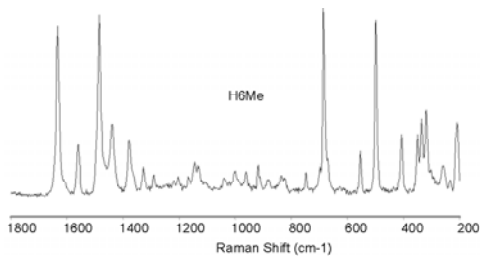
SOM Figure 26 7H on solid state Raman



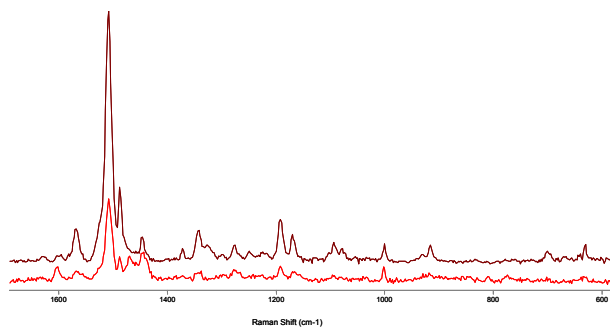
SOM Figure 27 8H on solid state Raman



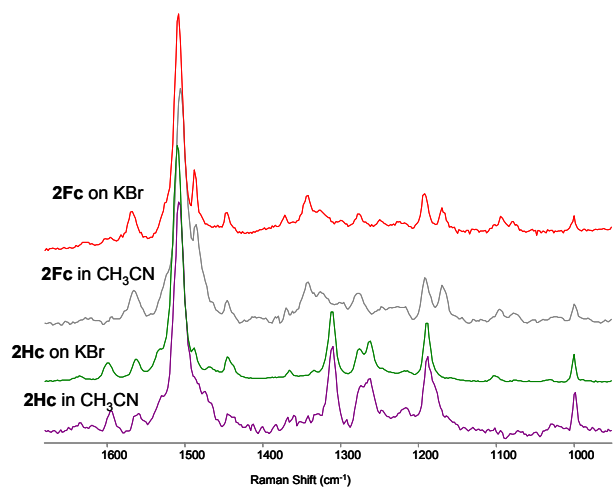
SOM Figure 28 9H on solid state Raman



SOM Figure 29 10H on solid state Raman



SOM Figure 30 Raman spectra of **2Fo** to **2Fc** (irradiation at 313 nm, λ_{exc} 785 nm, 6 * 20 s accumulations)



SOM Figure 31 Solid state and dilute solution Raman spectra (in acetonitrile, solvent subtracted) of **2Hc** and **2Fc**, λ_{exc} 785 nm, 6 * 20 s accumulations)