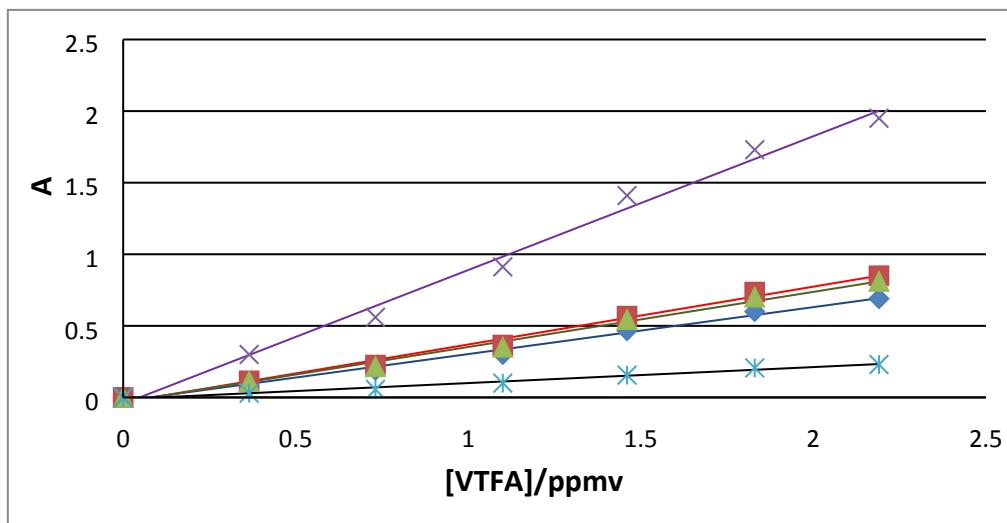
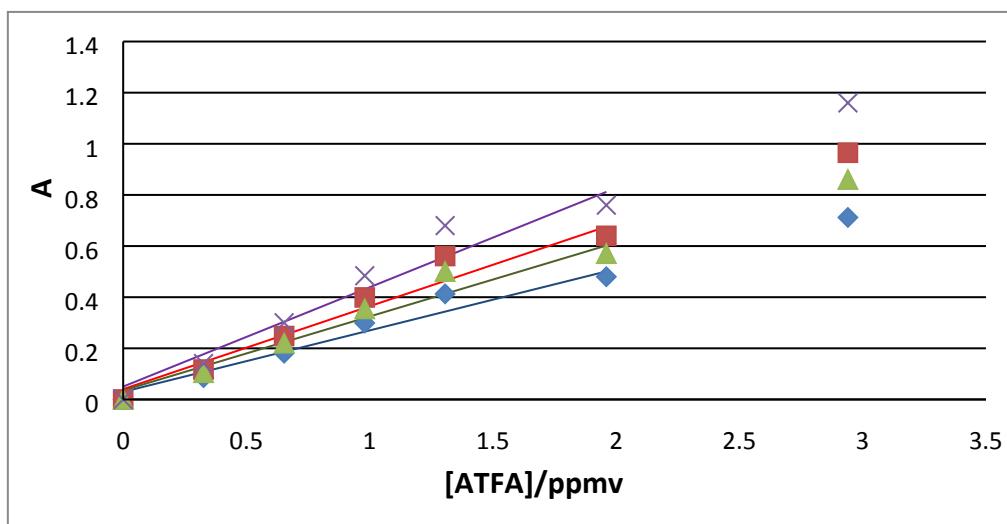


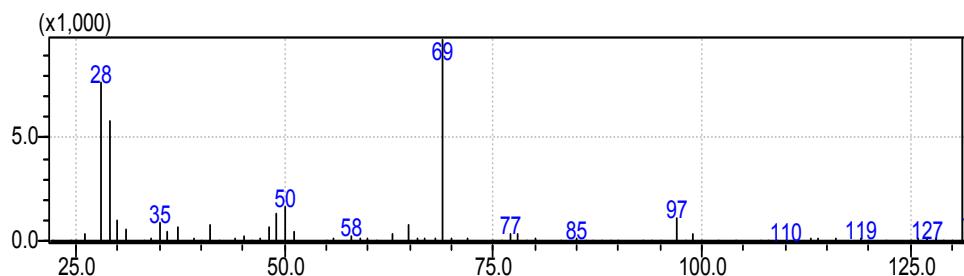
SUPPLEMENTARY MATERIAL



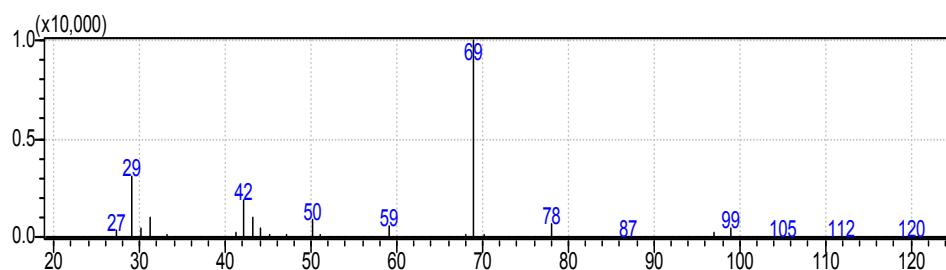
**Figure S1:** Plots of absorbance vs. compound concentration for VTFA, at different wavenumber: 1816 (blue), 1240 (red), 1193 (green), 1160 (purple) and 1657 (orange) cm<sup>-1</sup>.



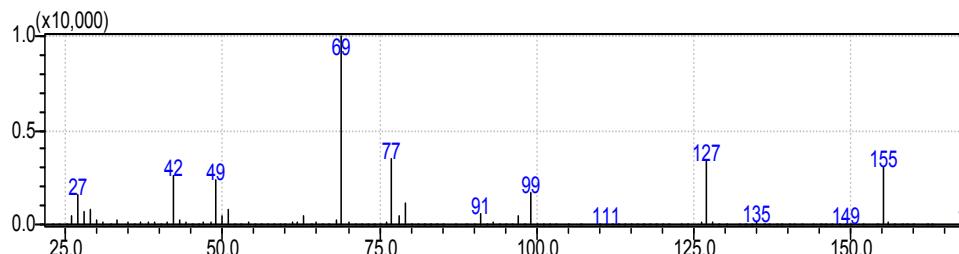
**Figure S2:** Plots of absorbance vs. compound concentration for ATFA, at different wavenumber: 1803 (blue), 1237 (red), 1188 (green), and 1152 (purple) cm<sup>-1</sup>.



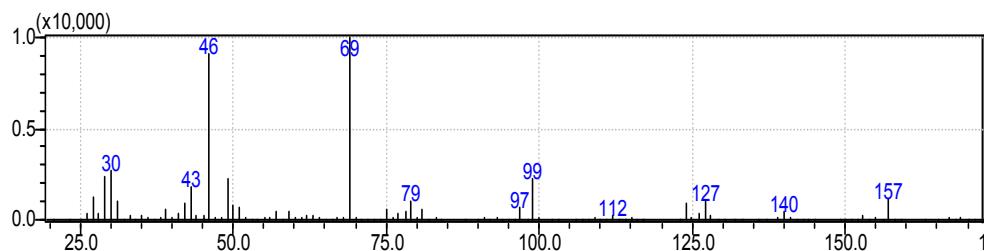
**Figure S3.** Electron impact mass spectrum (EI-MS) corresponding to the identified product in the reaction of VTFA + Cl atoms in presence and absence of NO<sub>x</sub>: CF<sub>3</sub>C(O)OC(O)CH<sub>2</sub>Cl.



**Figure S4.** Electron impact mass spectrum (EI-MS) corresponding to the identified product in the reaction of ATFA + OH radicals in presence and absence of NO<sub>x</sub>: CF<sub>3</sub>C(O)OCH<sub>2</sub>CHO.



**Figure S5.** Electron impact mass spectrum (EI-MS) corresponding to the identified product in the reaction of ATFA + Cl atoms in presence and absence of NO<sub>x</sub>: CF<sub>3</sub>C(O)OCH<sub>2</sub>C(O)CH<sub>2</sub>Cl.



**Figure S6.** Electron impact mass spectrum (EI-MS) corresponding to the detected product in the reaction of ATFA + Cl atoms in presence of NOx: alkyl nitrate.