**A Study to Identify S-S and S-S-S bonds in organic compounds by Mass spectrometry and Ultraviolet and Raman spectroscopy techniques**

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- Ultraviolet -visible spectra of di-*t*-butyl trisulfide (**a**) and di-*t*-butyl disulfide (**b**); 0.1

M in CH2Cl2. (**Figure S1)** ..............................................................................................

-Comparision TLC di-*t*- butyl trisulfide, di-*t*- butyl disulfide and mixtures (di-*t*- butyl

trisulfide/ di-*t*- butyl disulfide) in the wavelength of 365nm. (**Figure S2**).……............

-Ultraviolet -visible of *p*-tolyl disulfide (**c**) and bis(4-methylphenyl) trisulfide and *p*-tolyl

disulfide (**d**). **(Figure S3)** ……………………………………………………….….….

-Gas chromatography–Mass spectrometry of di-*t*- butyl trisulfide (**h**) and di-isopropyl

............................................................................................... trisulfide (**g**). (**Figure S4)**

**Characterization of products**



Di*-tert*- butyl trisulfide **(Figure S4, h)**

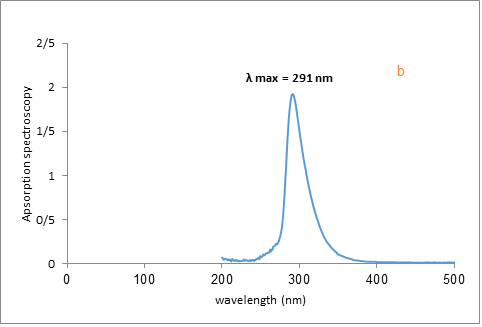
**GC–MS m/z (%);** 210(59.6), 89 (84.6), 85 (28.8), 57 (100), 43 (63.46), 41 (32.69).



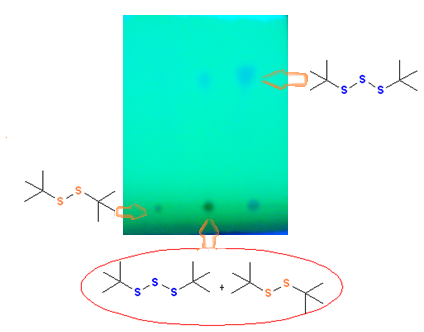
Di-isopropyl trisulfide **(Figure S4, g)**

**GC–MS m/z (%);** 182 (50. 6), 98 (8.5), 76 (7.5), 75 (82), 43 (100), 45 (12.3), 41 (44.5), 39 (14.5), 27 (28.4).

**Figure**

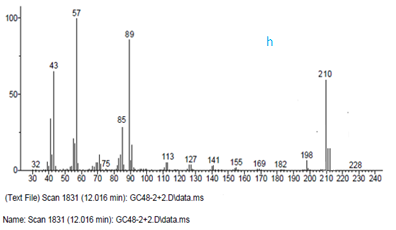
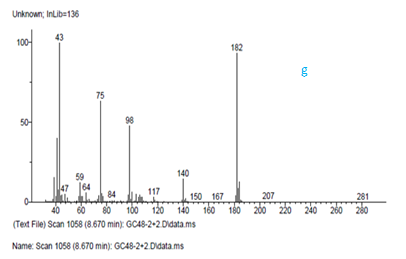


**Figure S1**. Ultraviolet -visible spectra of di-*t*-butyl trisulfide (a) and di-*t*-butyl disulfide (b); 0.1 M in CH2Cl2.



**Figure S2**. Comparision TLC di-*t*- butyl trisulfide, di-*t*- butyl disulfide and mixtures (di-*t*- butyl trisulfide/ di-*t*- butyl disulfide) in the wavelength of 365nm.

**Figure S3.** Ultraviolet -visible of *p*-tolyl disulfide (c) and bis(4-methylphenyl) trisulfide and *p*-tolyl disulfide (d)

**Figure S4.** Gas chromatography–Mass spectrometry of di-*t*- butyl trisulfide (h) and di-isopropyl trisulfide (g).