

Supporting Information

1. Experimental spectra of magnetosensitive radiation-generated recombination luminescence for the 11 alkanes

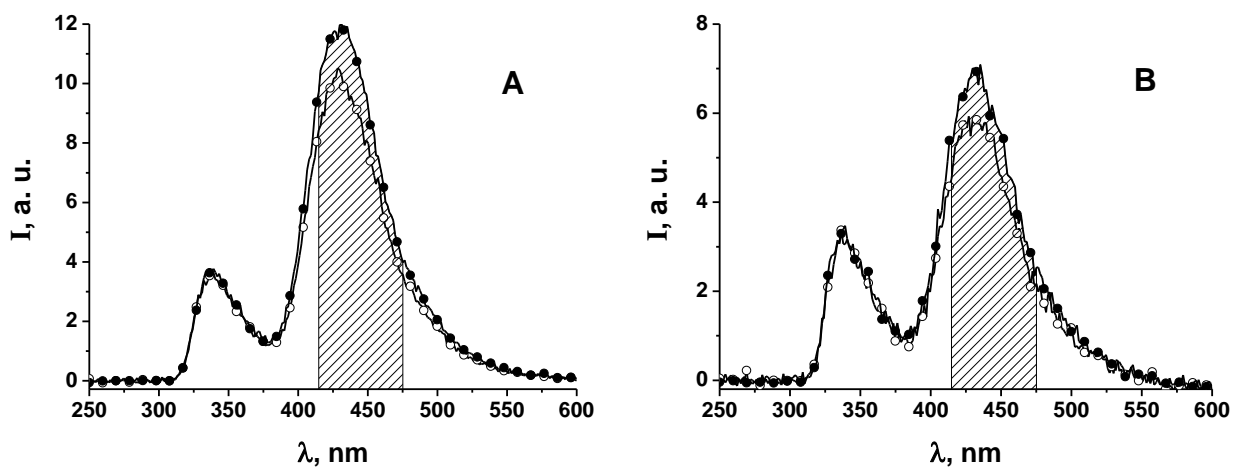


Figure S11: Spectra of X-ray generated luminescence for a mixture of $6 \cdot 10^{-3}$ M 1-(phenylethynyl)-4-(trifluoromethyl)benzene and $1 \cdot 10^{-2}$ M DMA in two cyclic alkanes in applied magnetic field 20 mT (●) and in zero field (○): **A** – cyclohexane, $\chi_E = 17.3 \pm 0.5\%$; **B** - methylcyclohexane, $\chi_E = 16.2 \pm 0.6\%$. Magnetic field effect was determined in the marked wavelength range.

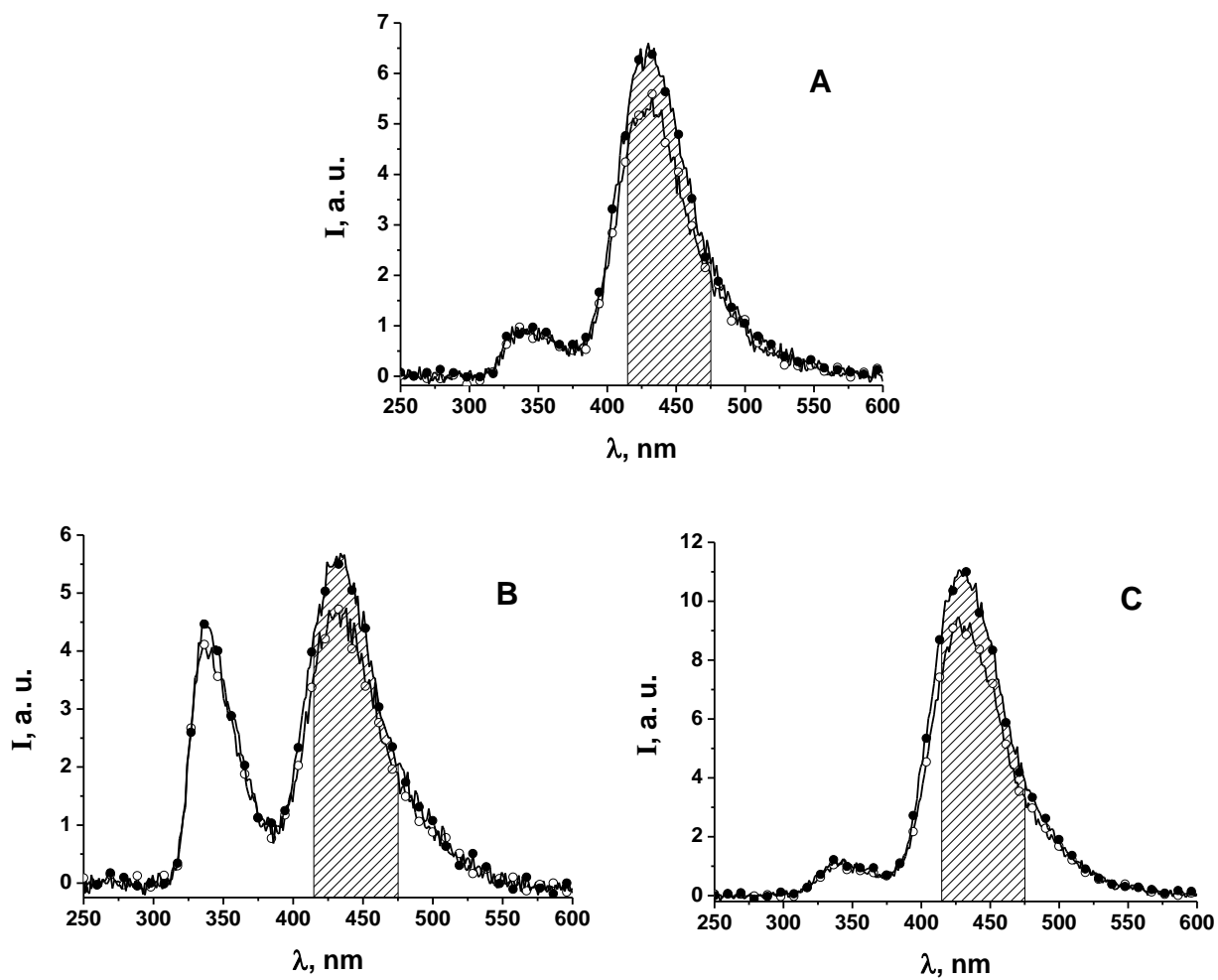


Figure SI2: Spectra of X-ray generated luminescence for a mixture of $6 \cdot 10^{-3}$ M 1-(phenylethynyl)-4-(trifluoromethyl)benzene and $1 \cdot 10^{-2}$ M DMA in three branched alkanes in applied magnetic field 20 mT (●) and in zero field (○): **A** – 2,3-dimethylbutane, $\chi_E = 20.3 \pm 0.5\%$; **B** – squalane, $\chi_E = 18.1 \pm 0.6\%$; **C** – isooctane, $\chi_E = 19.1 \pm 0.5\%$. Magnetic field effect was determined in the marked wavelength range.

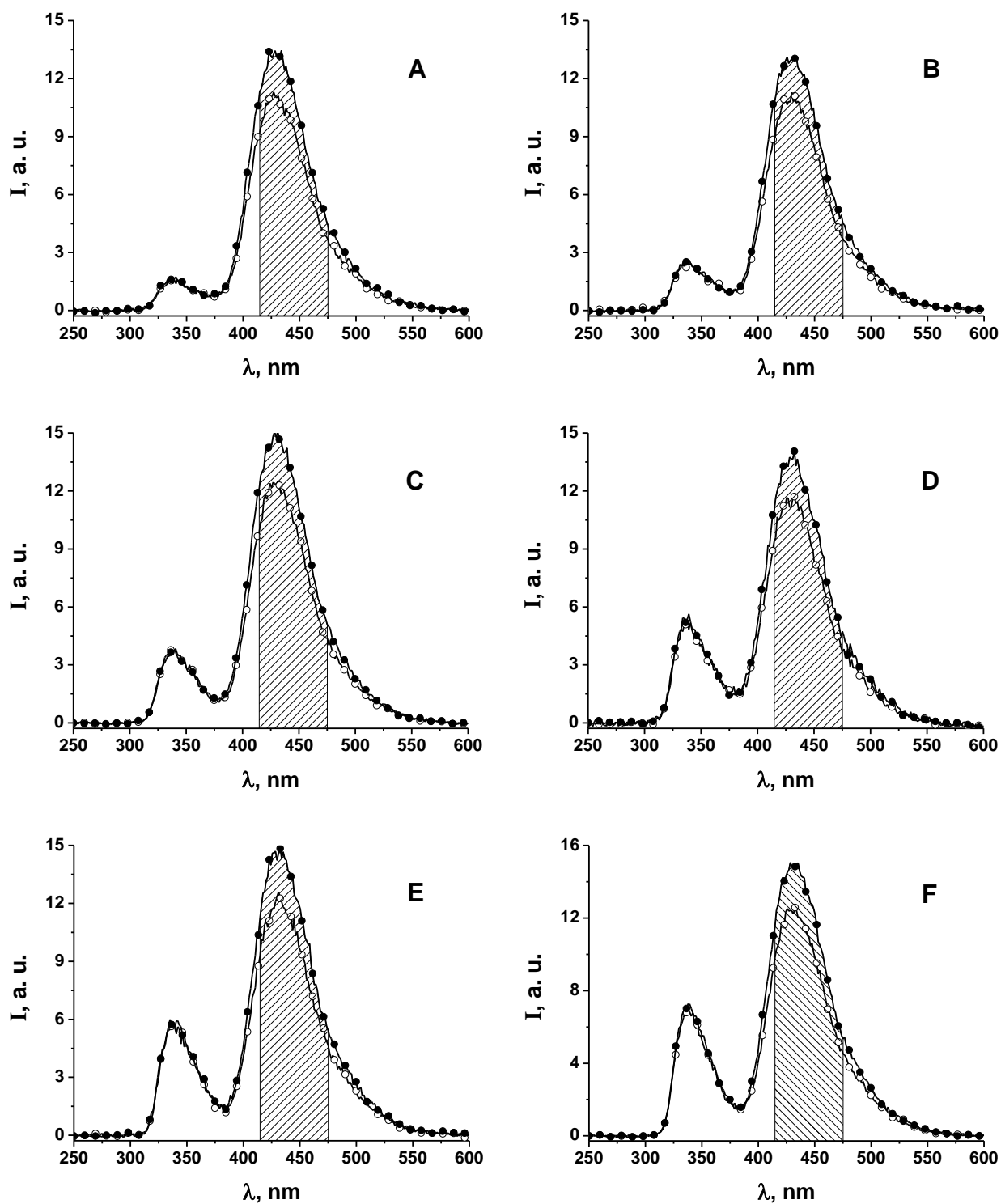


Figure SI3: Spectra of X-ray generated luminescence for a mixture of $6 \cdot 10^{-3}$ M 1-(phenylethynyl)-4-(trifluoromethyl)benzene and $1 \cdot 10^{-2}$ M DMA in six linear alkanes in applied magnetic field 20 mT (●) and in zero field (○): **A** – *n*-hexane, $\chi_E = 19.6 \pm 0.7\%$; **B** – *n*-heptane, $\chi_E = 19.2 \pm 0.2\%$; **C** – *n*-octane, $\chi_E = 19.4 \pm 0.7\%$; **D** – *n*-decane, $\chi_E = 19.3 \pm 0.4\%$; **E** – *n*-dodecane, $\chi_E = 19.8 \pm 0.6\%$; **F** – *n*-hexadecane, $\chi_E = 19.6 \pm 0.5\%$. Magnetic field effect was determined in the marked wavelength range.

2. Characterization of synthesized 1-(phenylethynyl)-4-(trifluoromethyl)benzene

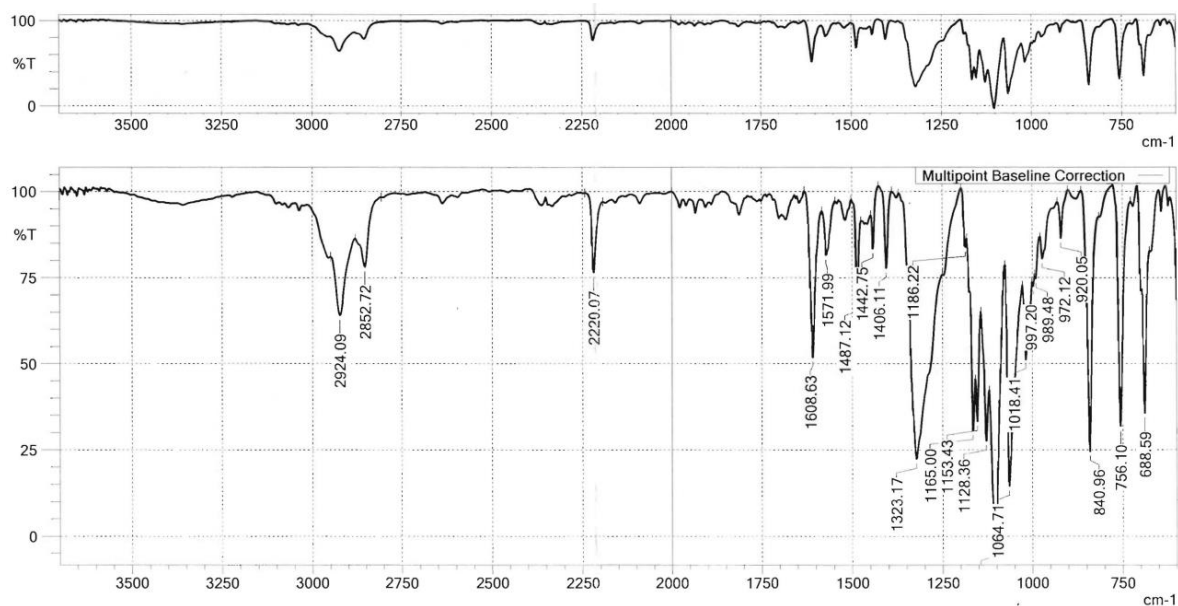


Figure SI4: FTIR spectrum for a crystal of 1-(phenylethynyl)-4-(trifluoromethyl)benzene.

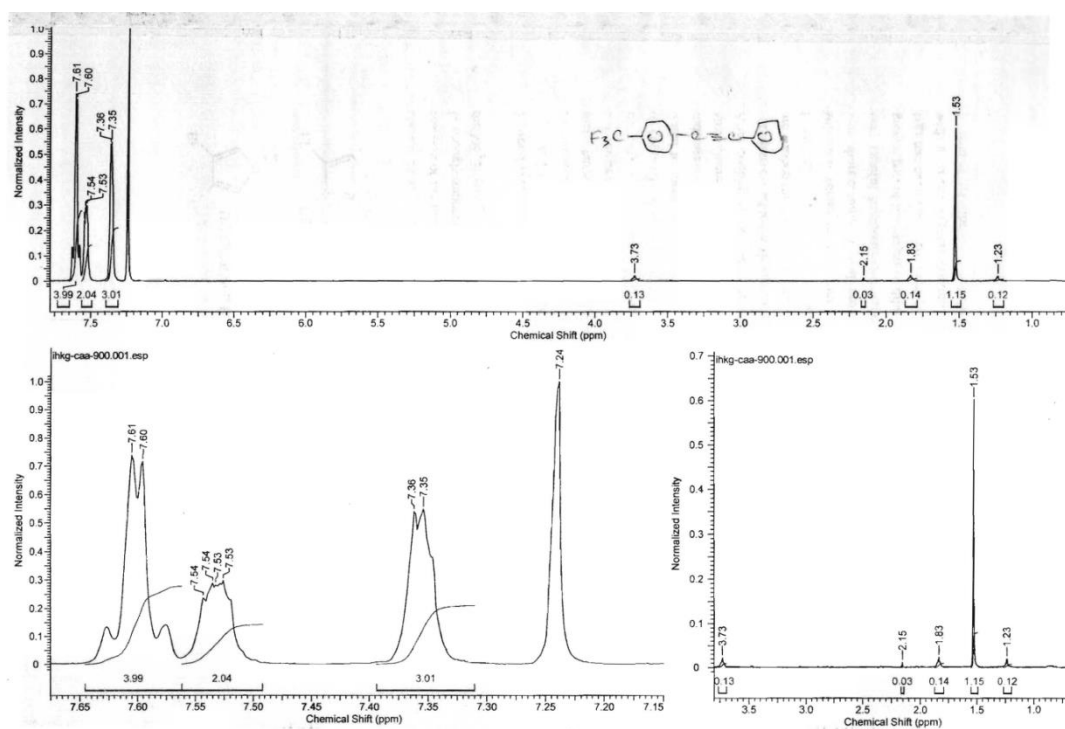


Figure SI5: ^1H NMR spectra of 1-(phenylethynyl)-4-(trifluoromethyl)benzene solution in CDCl_3 . The peaks at 1.53 ppm, (H_2O), 1.23 ppm, 1.83 ppm, 2.15 ppm, 3.73 ppm (CHCl_3) are due to minor impurities in the solvent (see the spectrum of “pure” CDCl_3 in Figure SI6 below).

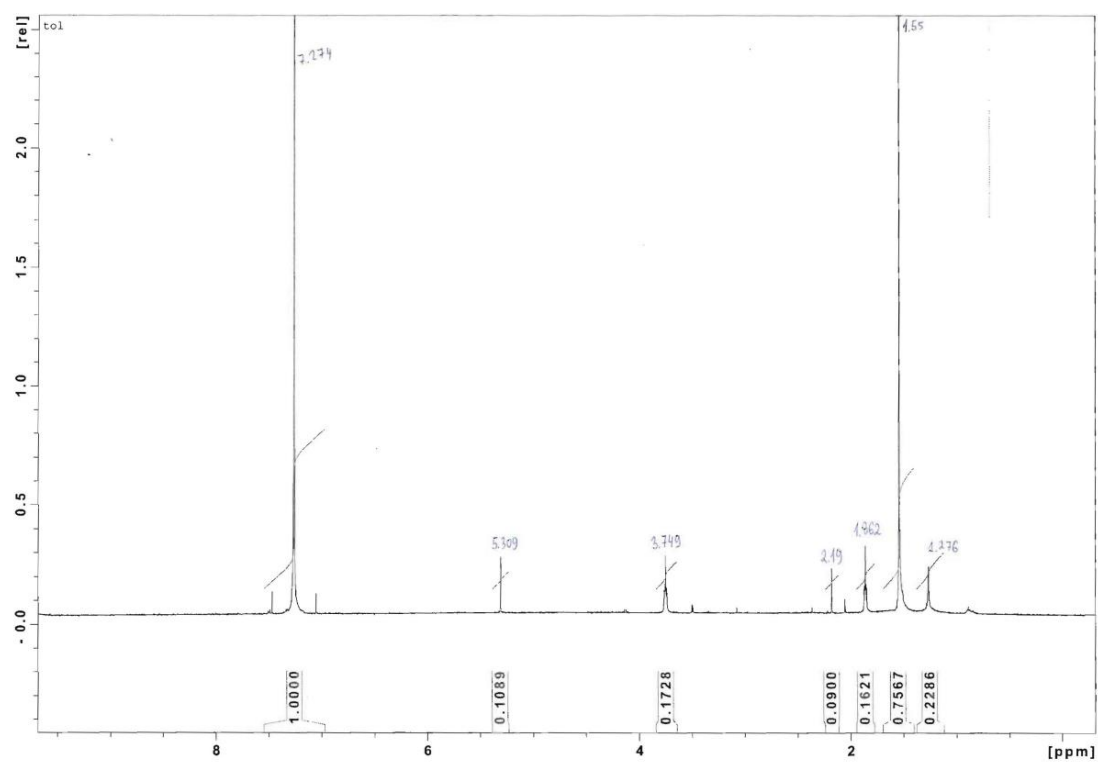


Figure SI6: ^1H NMR spectrum of CDCl_3 used to take NMR spectrum of the synthesized compound.