

## Supporting Information

### **Polydimethylsiloxanes with grafted dibenzoylmethanatoboron difluoride: synthesis and properties**

Anastasia S. Belova,<sup>1</sup> Arevik G. Khchoyan,<sup>1,2</sup> Tatiana M. Il'ina,<sup>1,2</sup> Yuriy N. Kononevich,<sup>1,\*</sup> Dmitry S. Ionov,<sup>3</sup> Viacheslav A. Sazhnikov,<sup>3</sup> Dmitry A. Khanin,<sup>1</sup> Galina G. Nikiforova,<sup>1</sup> Viktor G. Vasil'ev,<sup>1</sup> and Aziz M. Muzafarov<sup>1,4</sup>

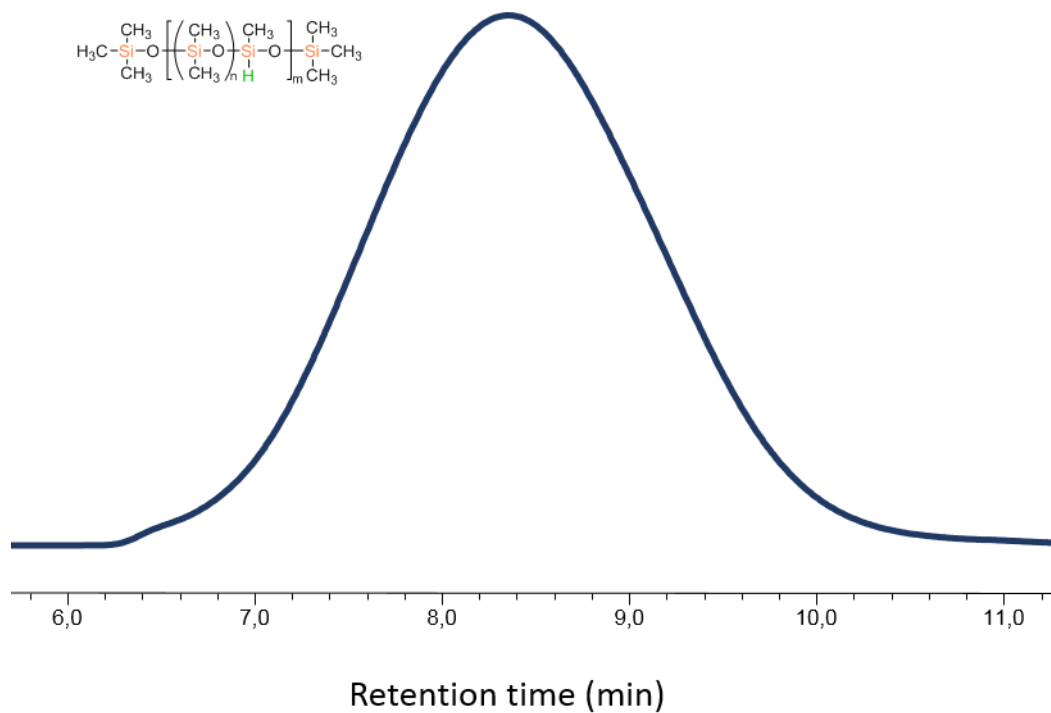
<sup>1</sup> A.N. Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences,  
119991 Moscow, Russian Federation

<sup>2</sup> D. Mendeleev University of Chemical Technology of Russia, 125047 Moscow, Russian  
Federation

<sup>3</sup> Photochemistry Center, FSRC "Crystallography and Photonics" of Russian Academy of  
Sciences, 1119421 Moscow, Russian Federation

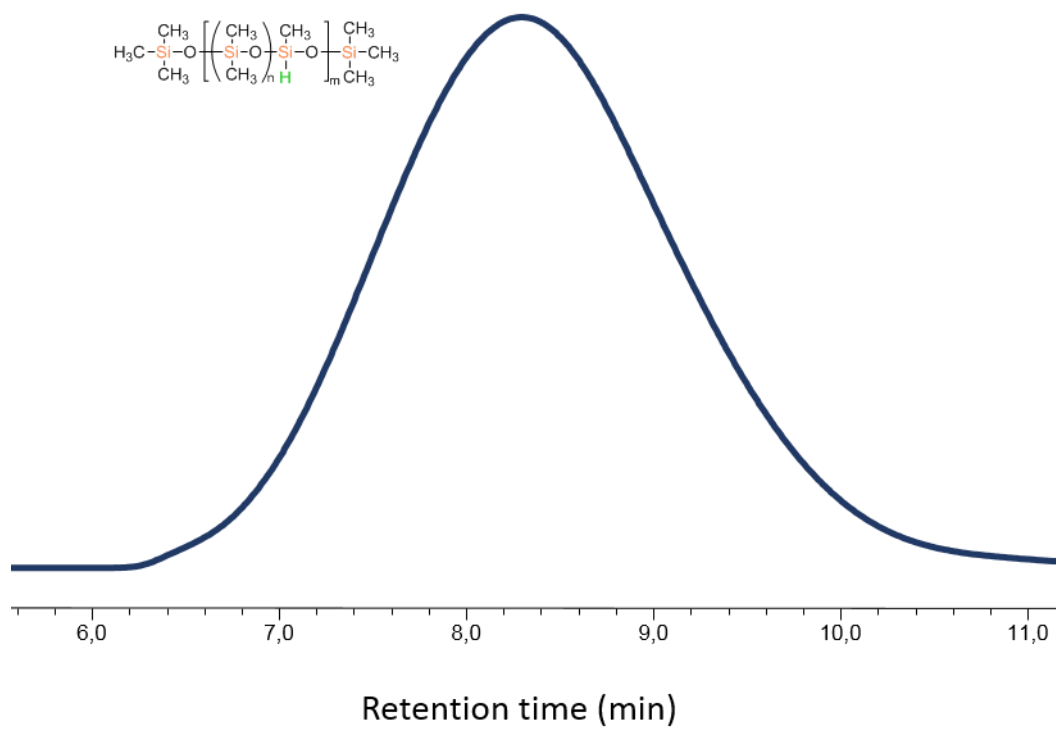
<sup>4</sup> N.S. Enikolopov Institute of Synthetic Polymeric Materials of Russian Academy of Sciences,  
117393 Moscow, Russian Federation

Mp = 40 000

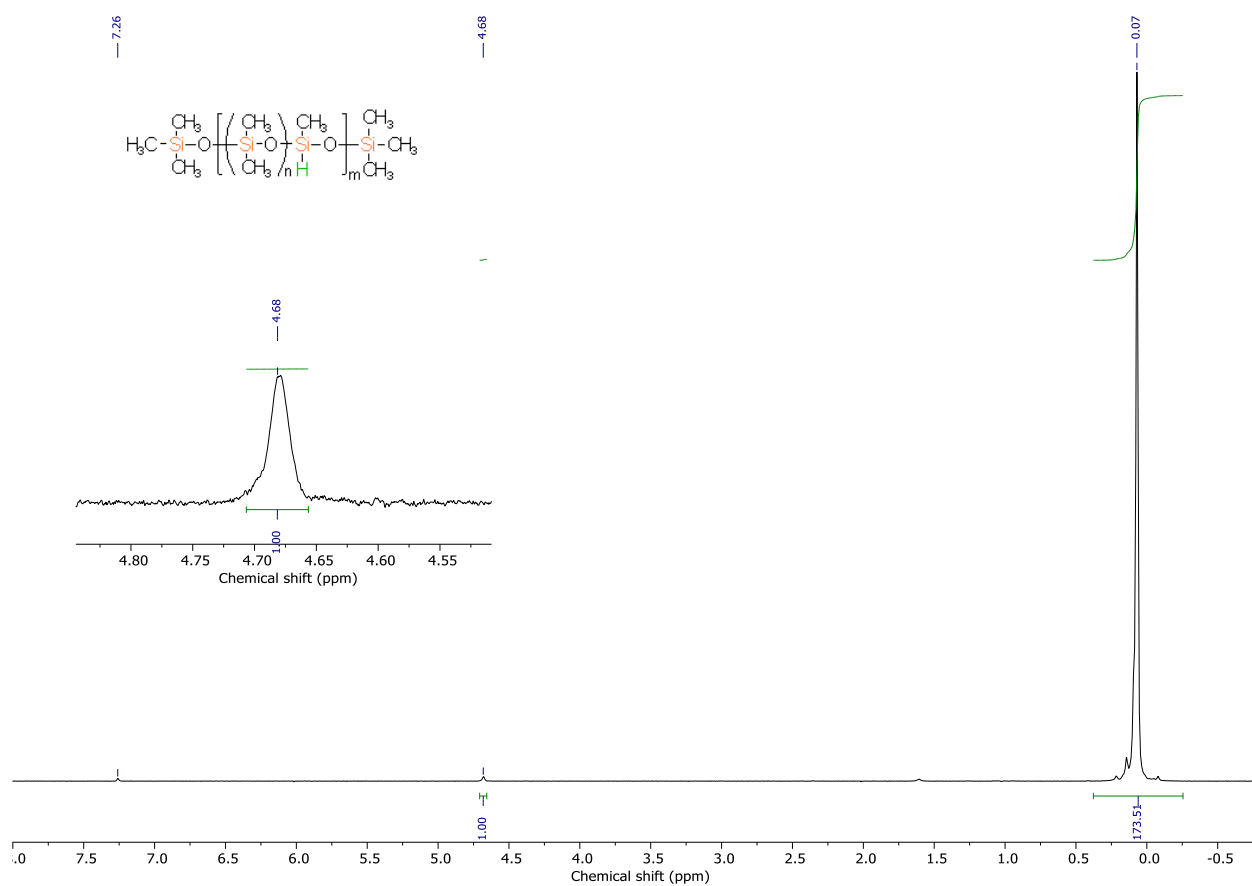


**Figure S1.** GPC curve of polymer **1 a** obtained in toluene using column Phenogel 10<sup>4</sup> Å.

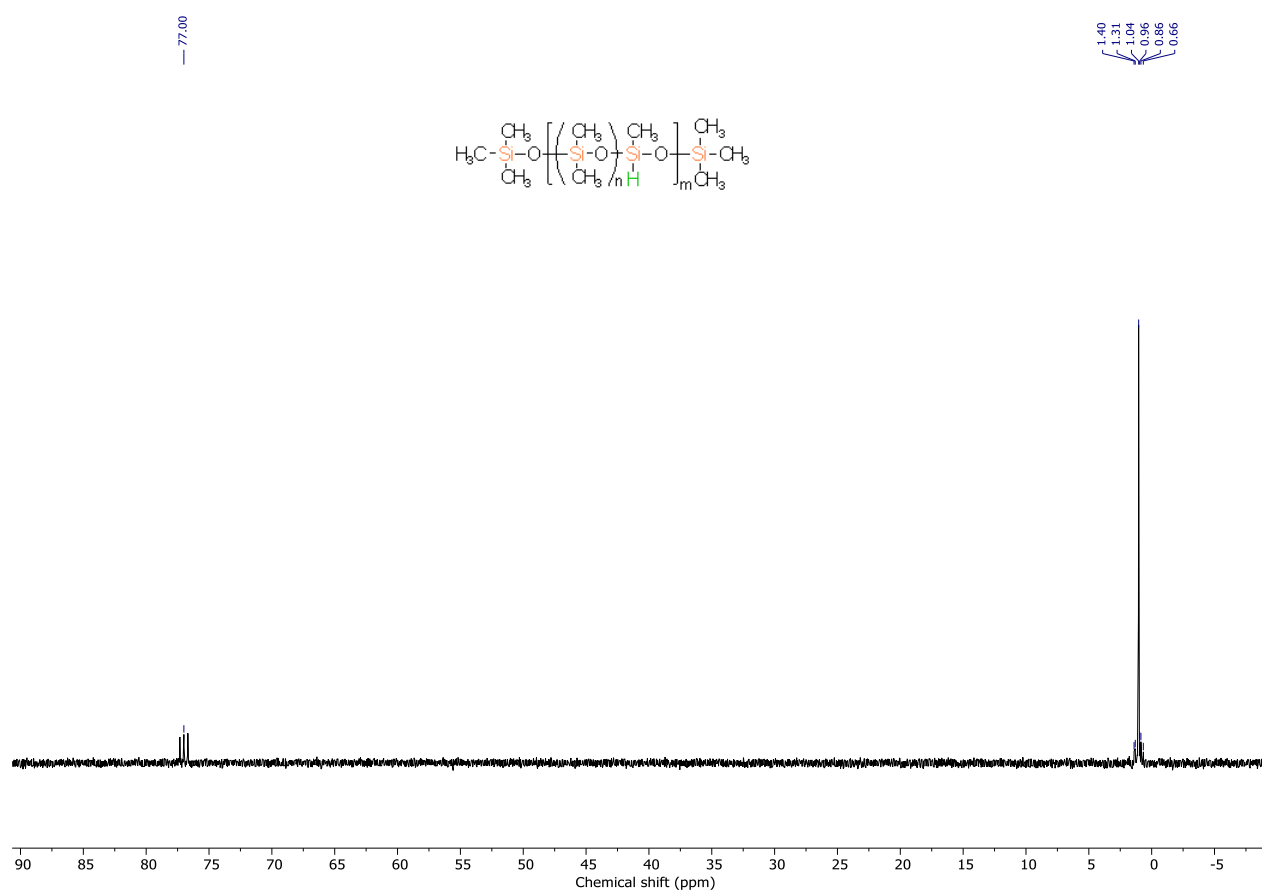
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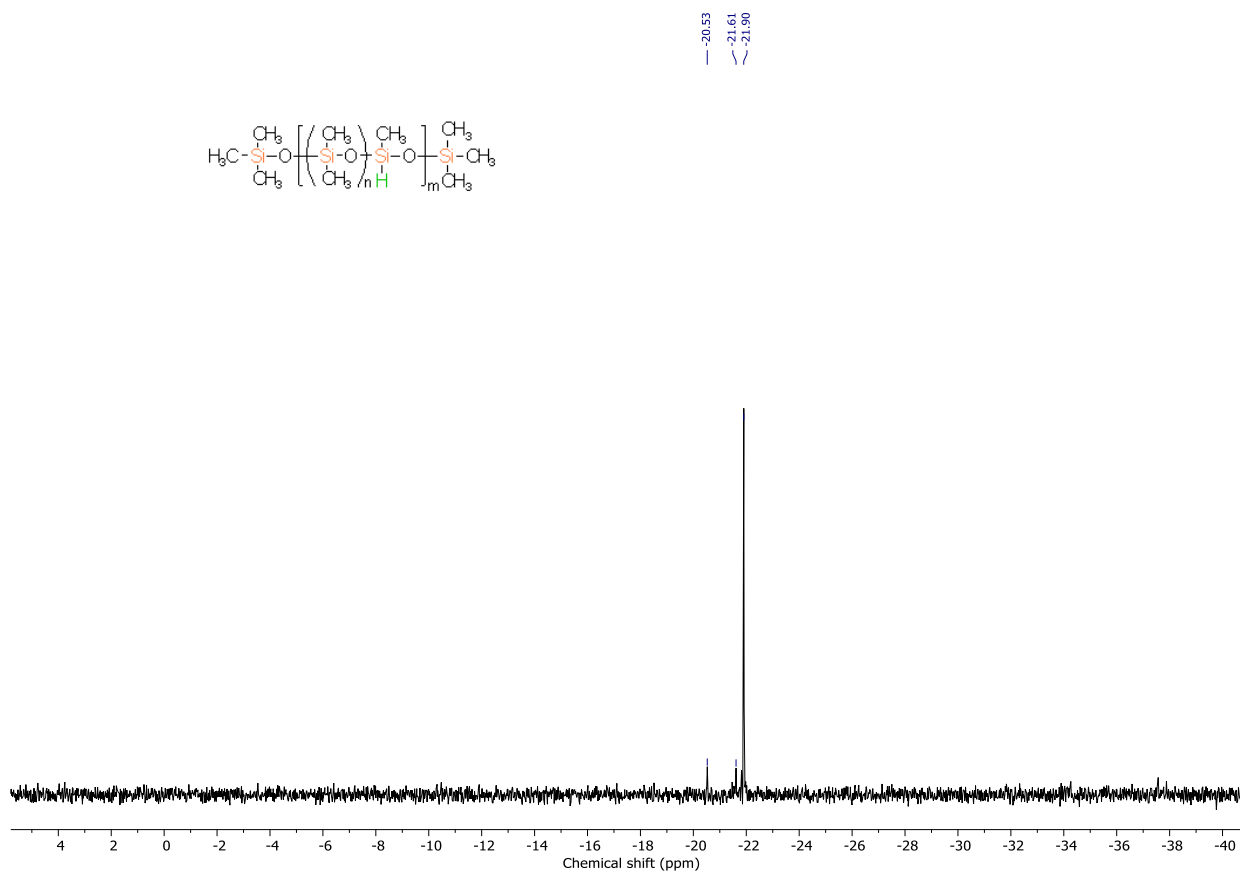
**Figure S2.** GPC curve of polymer **1 a** obtained in toluene using column Phenogel 10<sup>4</sup> Å.



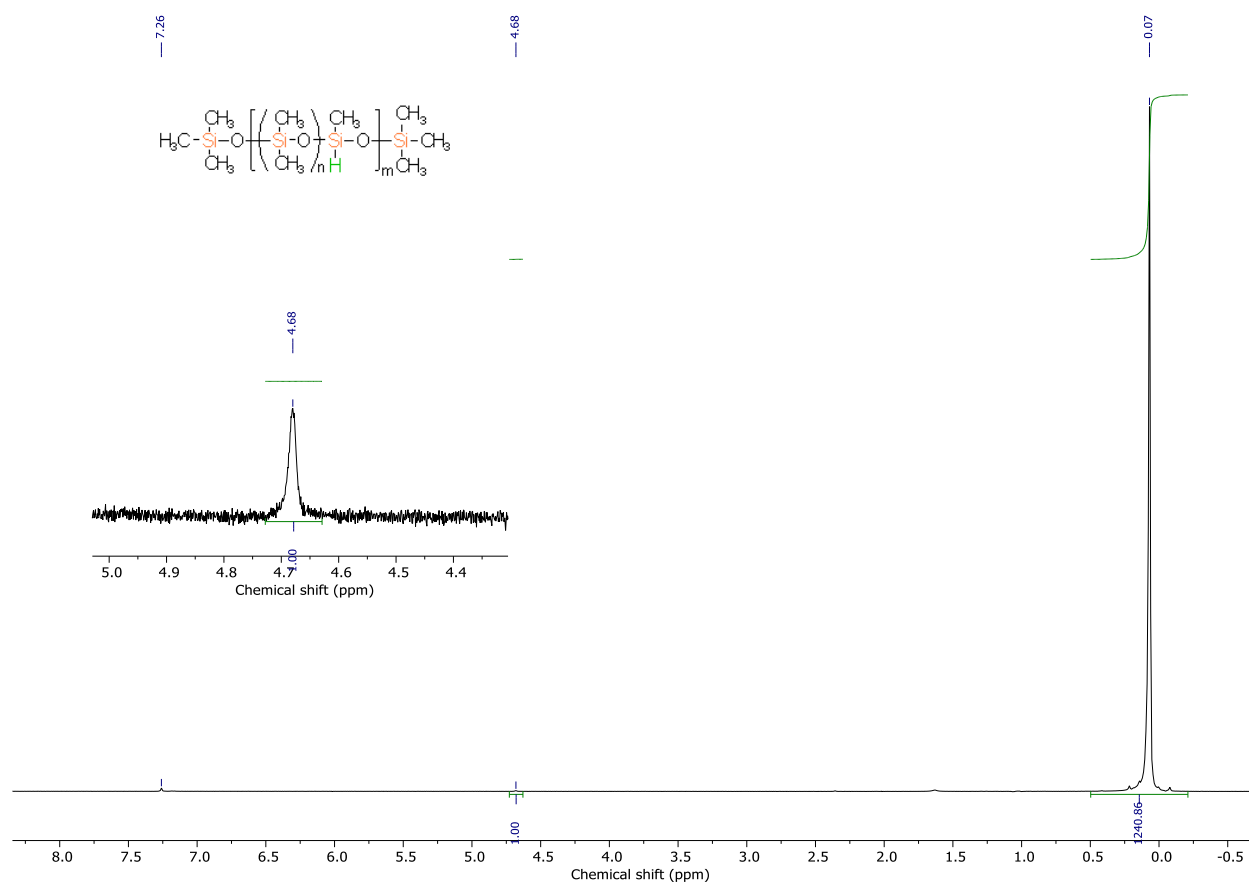
**Figure S3.** <sup>1</sup>H NMR spectrum of polymer **1 a** in CDCl<sub>3</sub>.



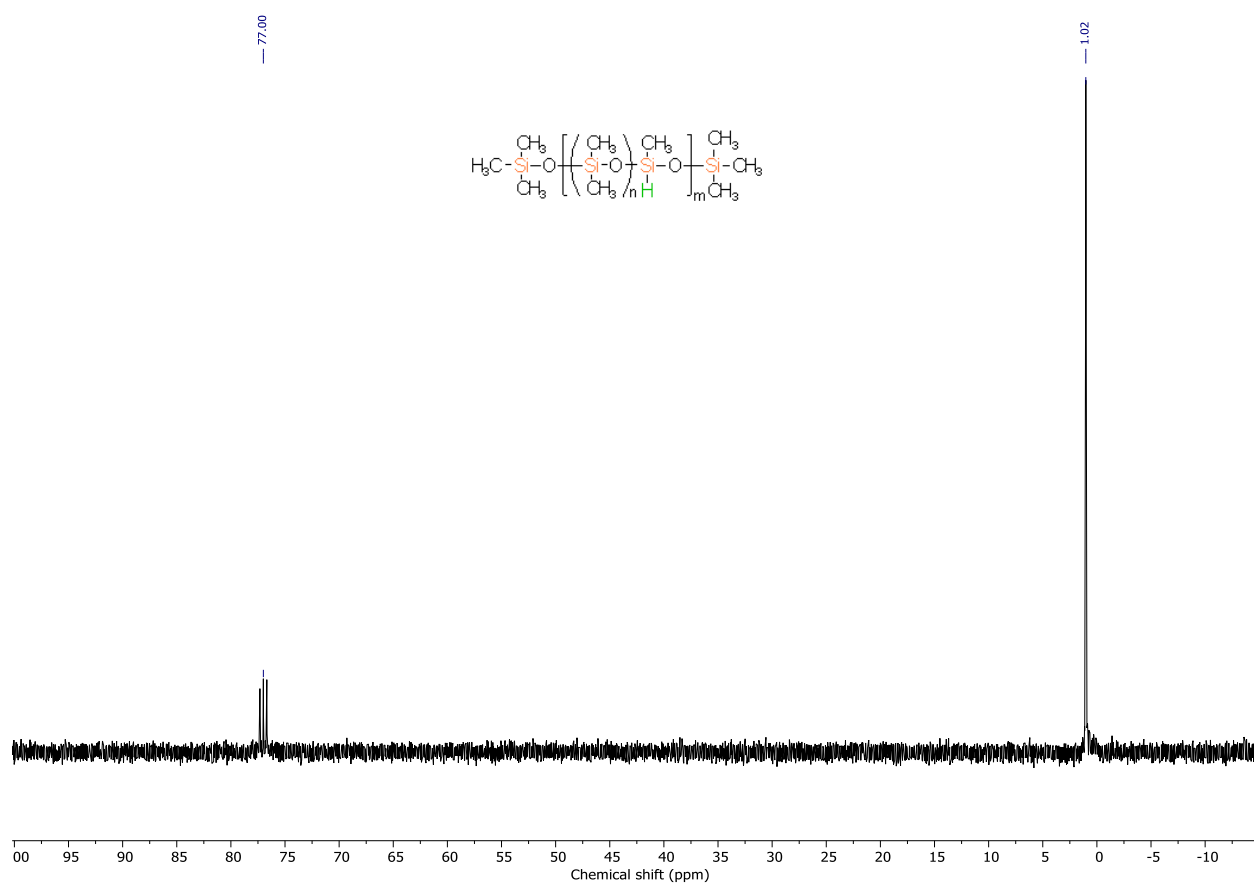
**Figure S4.** <sup>13</sup>C NMR spectrum of polymer **1 a** in CDCl<sub>3</sub>.



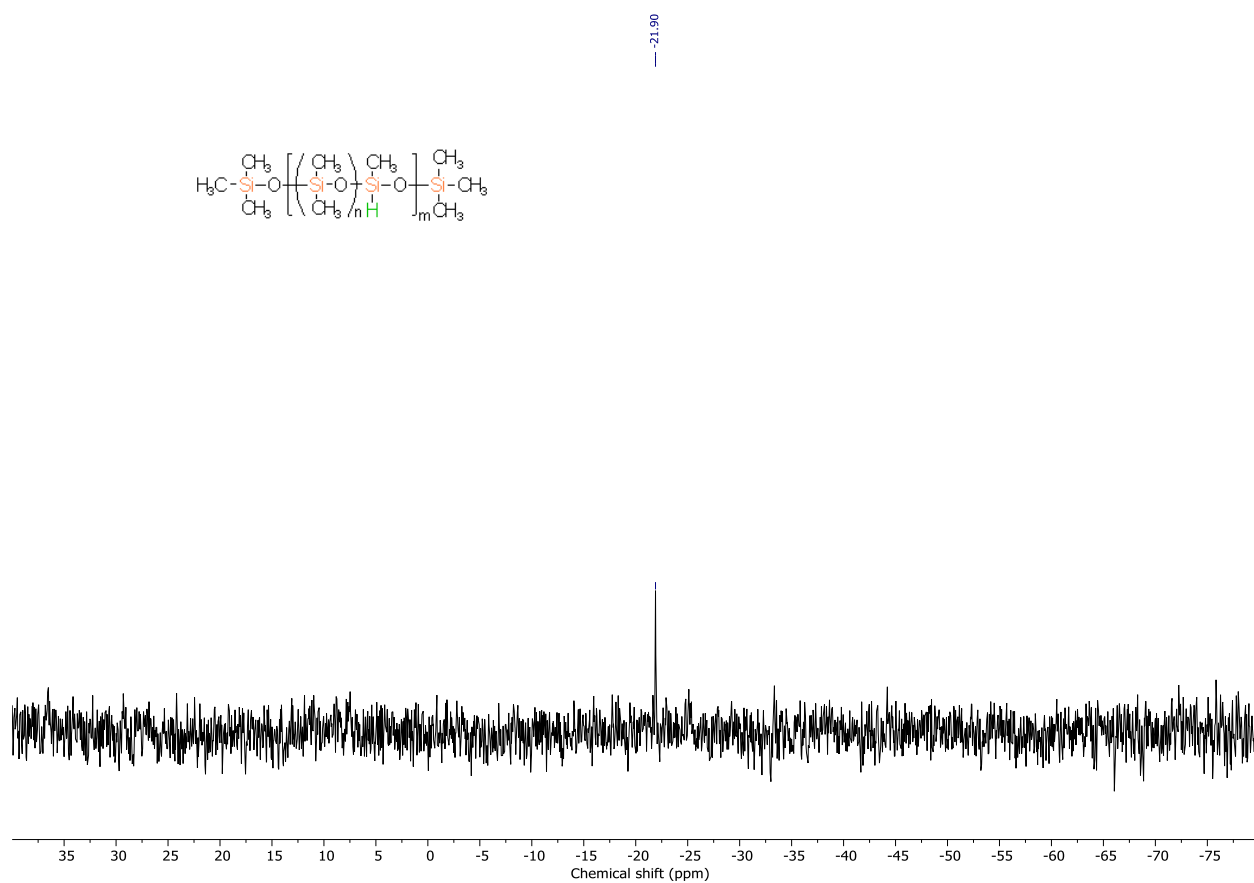
**Figure S5.**  $^{29}\text{Si}$  NMR spectrum of polymer **1 a** in  $\text{CDCl}_3$ .



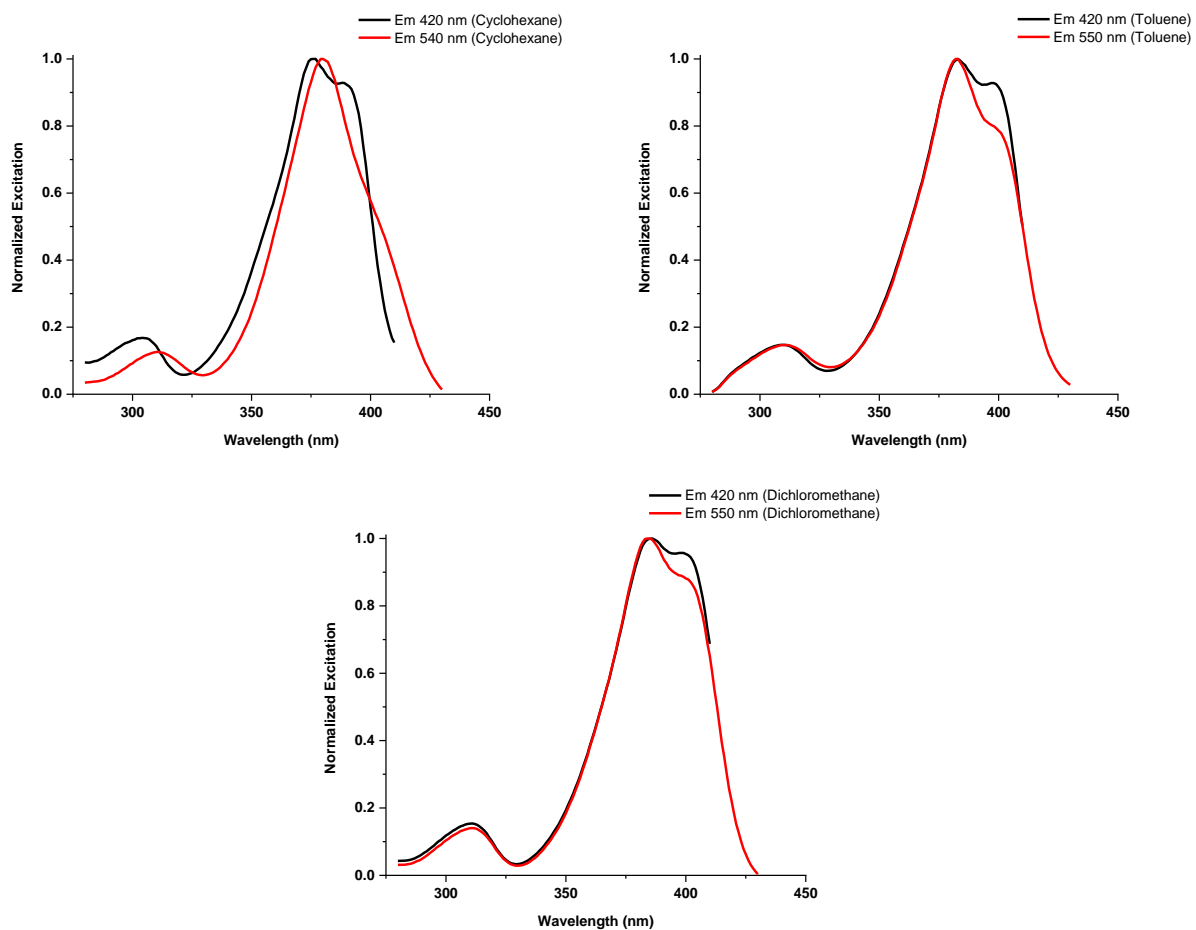
**Figure S6.**  $^1\text{H}$  NMR spectrum of polymer **1 b** in  $\text{CDCl}_3$ .



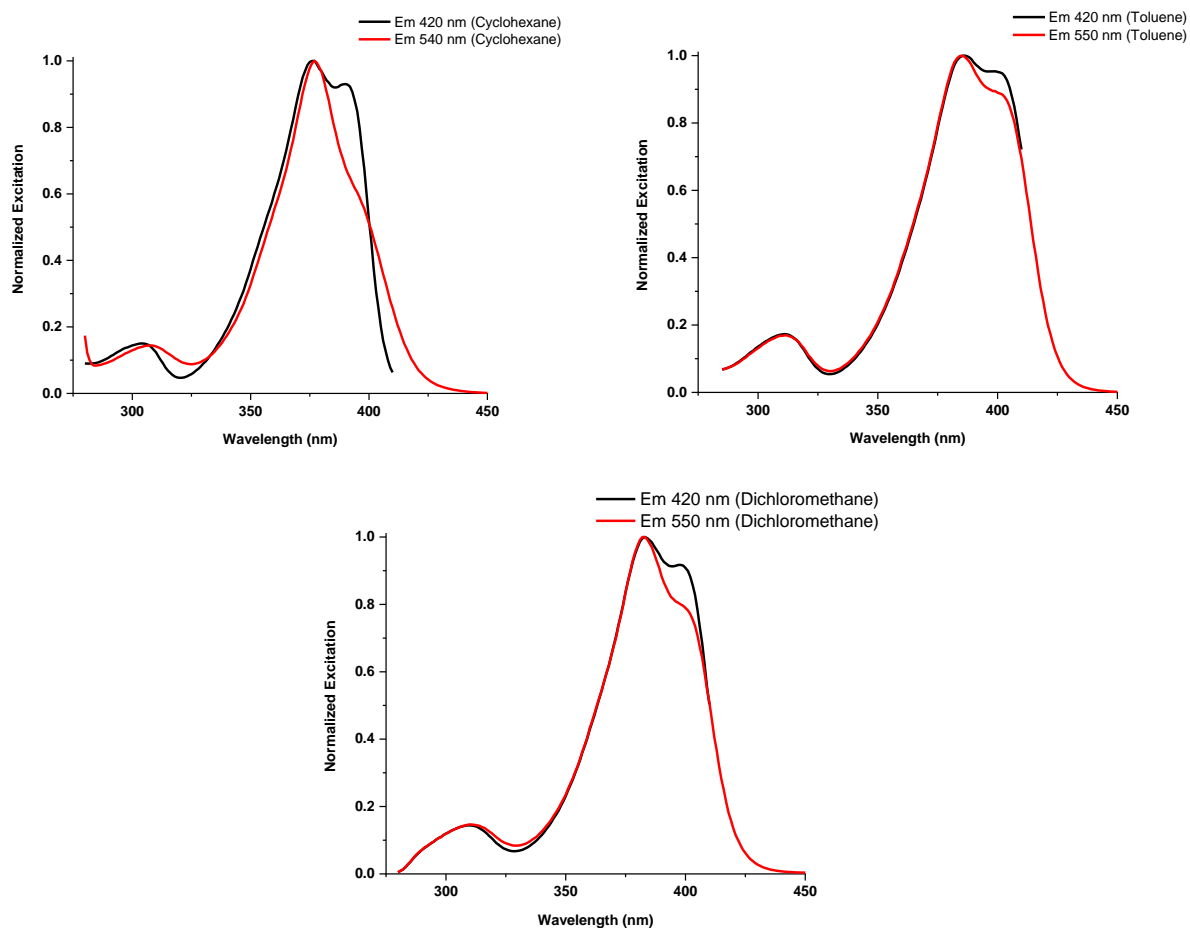
**Figure S7.** <sup>13</sup>C NMR spectrum of polymer **1 b** in CDCl<sub>3</sub>.



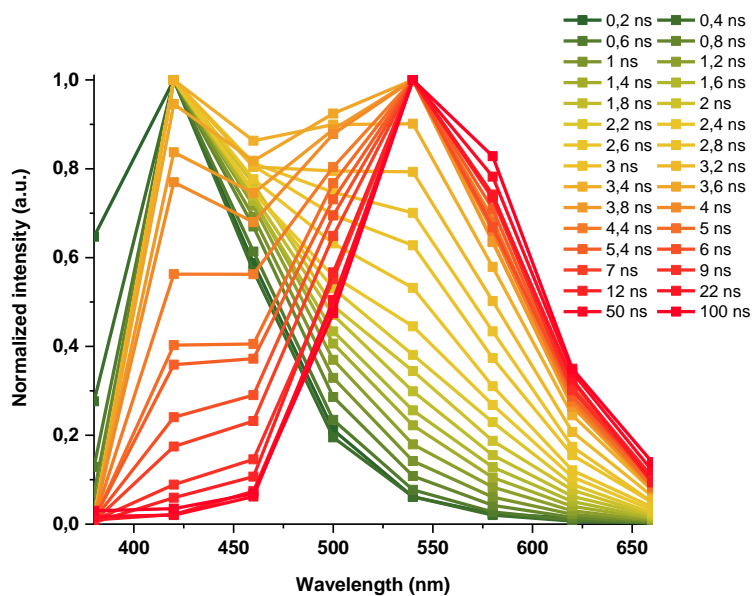
**Figure S8.** <sup>29</sup>Si NMR spectrum of polymer **1 b** in CDCl<sub>3</sub>.



**Figure S9.** Normalized fluorescence excitation spectra of polymer **3 a** in various solvents (RT, OD<0.1).



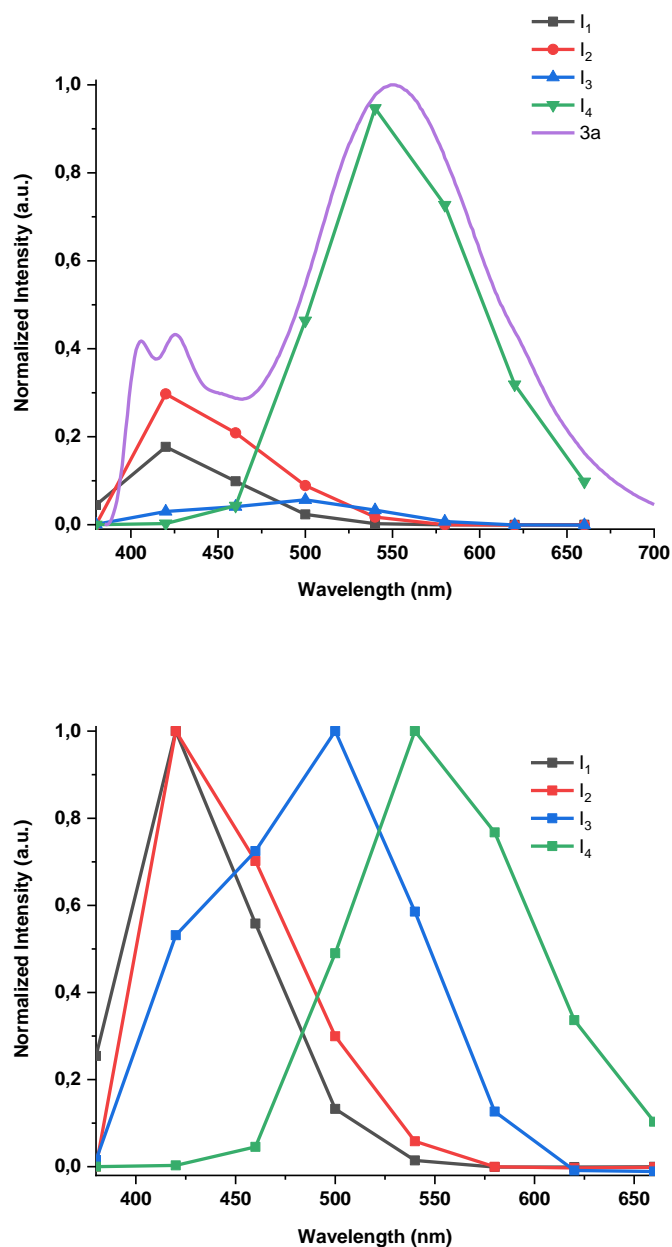
**Figure S10.** Normalized fluorescence excitation spectra of polymer **3 b** in various solvents (RT, OD<0.1).



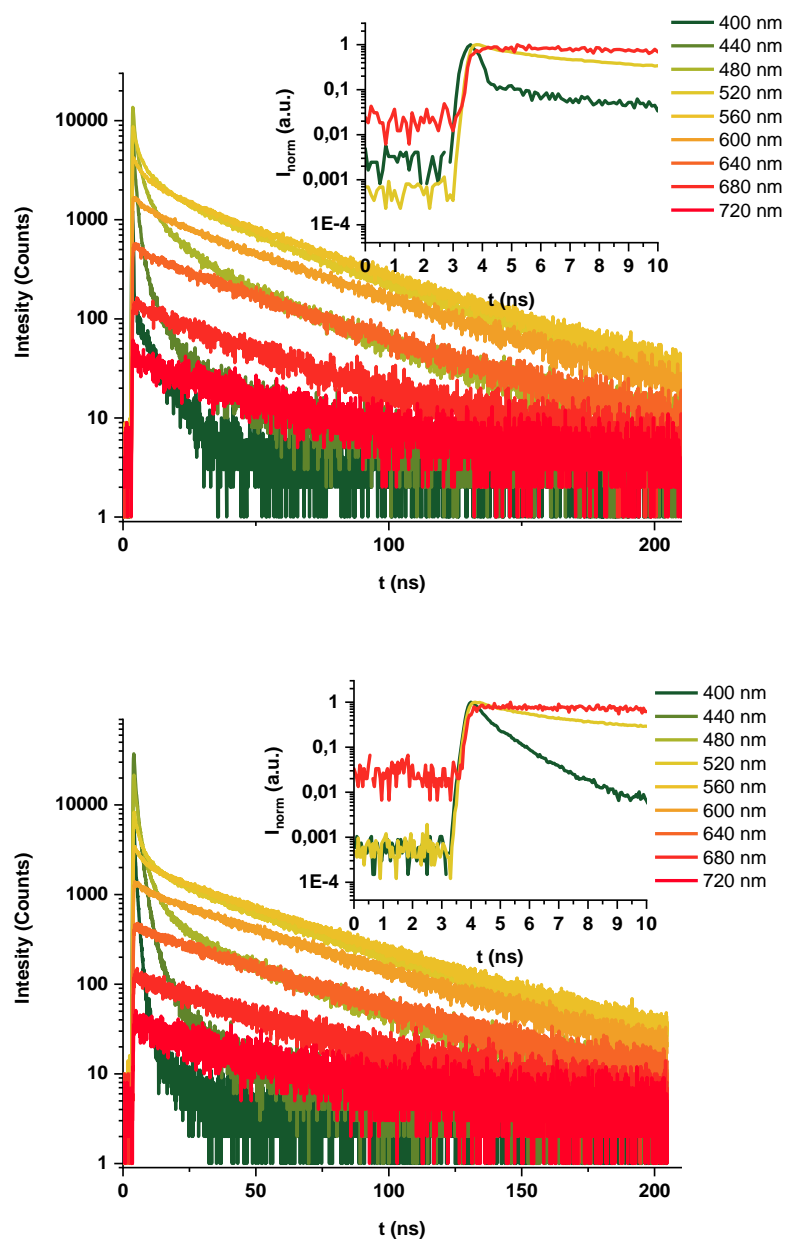
**Figure S11.** The fluorescence spectra obtained from the fluorescence kinetics in Figure 30 at various times in the range of 0.2-100 ns normalized to maximum at a given time.

**Table S1.** Results of multiexponential fitting obtained for fluorescence decays of polymers **3 a,b** at 436 and 540 nm in various solvents ( $\lambda_{\text{ex}} = 375$  nm).

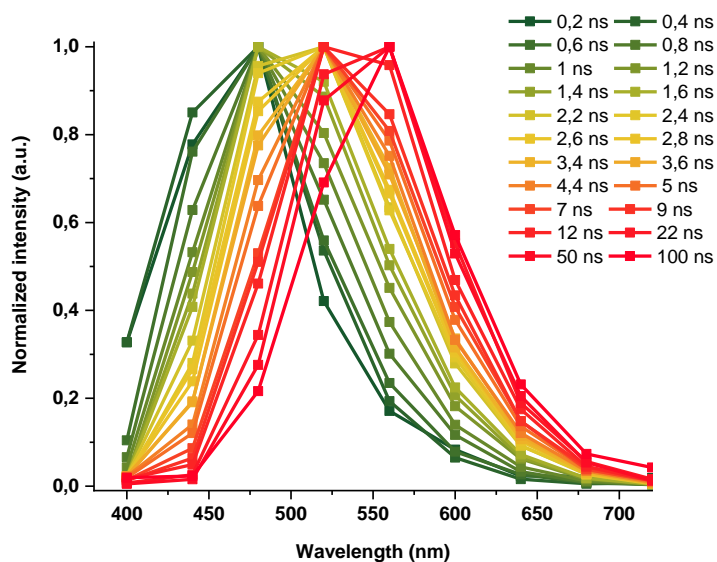
Polymer	Solvent	436 nm		540 nm	
		$\tau$ (ns)	A (%)	$\tau$ (ns)	A(%)
<b>3 a</b>	Cyclohexane	1.48	15	55.2	51
		0.66	28	2.36	49
		0.14	57		
	Toluene	1.85	11	47.3	22
		0.99	51	1.33	78
		0.25	37		
	Dichloromethane	2.63	5	53.9	42
		1.22	65	7.42	16
		0.25	30	1.53	42
<b>3b</b>	Cyclohexane	1.45	67	55.3	24
		0.32	33	1.59	76
	Toluene	1.79	78	51.8	4
		0.30	22	1.87	96
	Dichloromethane	1.76	81	47.1	3
		0.49	19	1.87	97



**Figure S12.**  $I_1 - I_4$  intensities spectra corresponding to the exponential terms with lifetimes  $\tau_1 - \tau_4$  obtained from the global fitting of fluorescence decays of **3 a** in cyclohexane and comparison with steady-state fluorescence spectra for **3 a** (top); normalized spectra of  $I_1 - I_4$  intensities for **3 a** (bottom) in cyclohexane.



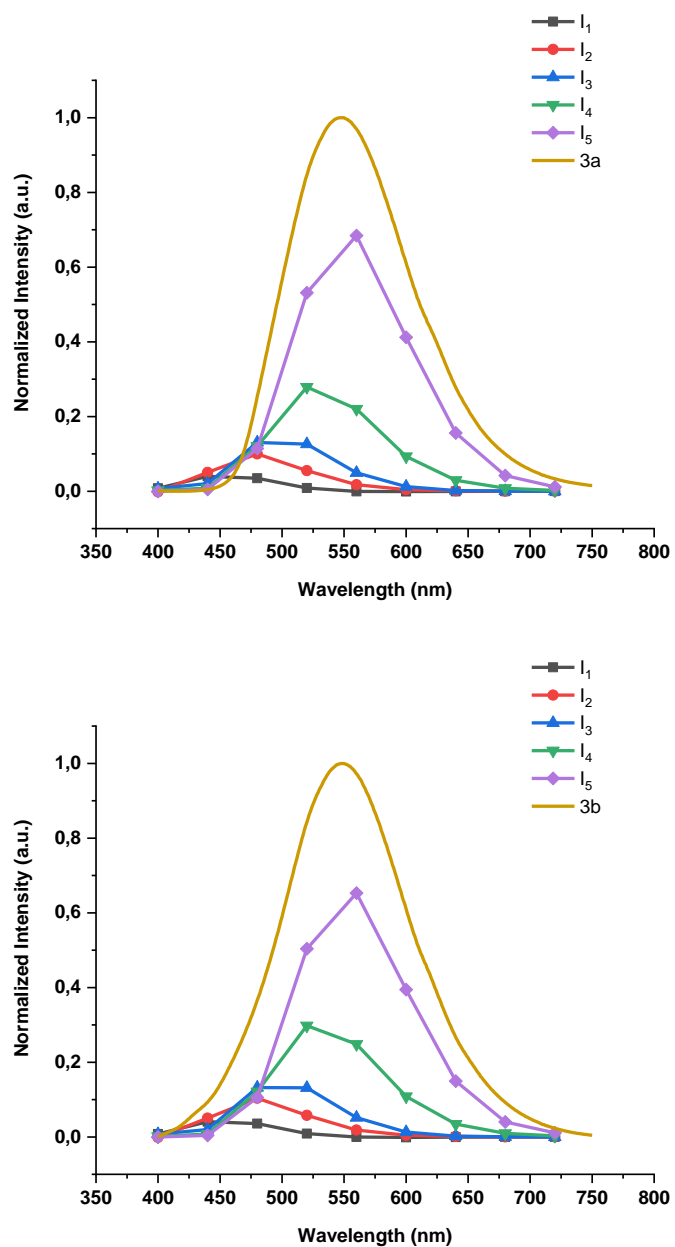
**Figure S13.** Fluorescence decay curves for polymers **3 a** (top) and **3 b** (bottom) at series of wavelengths in the range of 380-660 nm in the solid state ( $\lambda_{\text{ex}} = 375$  nm). In the insets the comparison of normalized decays obtained at 300, 520, 680 nm is shown.



**Figure S14.** The fluorescence spectra of **3 a** in the solid state obtained from the fluorescence kinetics in Figure 33 at various times in the range of 0.2-100 ns normalized to maximum at a given time.

**Table S2.** Global fitting results obtained for fluorescence decays of **3 a,b** in the solid state,  $\lambda_{\text{ex}} = 375$  nm.

Polymer	$\tau_1$ (ns)	$\tau_2$ (ns)	$\tau_3$ (ns)	$\tau_4$ (ns)	$\tau_5$ (ns)
<b>3 a</b>	0.323	1.55	6.46	27	53.54
<b>3 b</b>	0.397	1.412	4.2	17.6	47.86



**Figure S15.**  $I_1 - I_4$  intensities spectra corresponding to the exponential terms with lifetimes  $\tau_1 - \tau_5$  obtained from the global fitting of fluorescence decays of **3 a** (top) and **3 b** (bottom) in the solid state and comparison with steady-state fluorescence spectra.