

Supplementary Material for the article

# Red Light-Emitting Water-Soluble Luminescent Iridium-Containing Polynorbornenes. Synthesis, Characterization and Oxygen Sensing Properties in Biological Tissues *in Vivo*

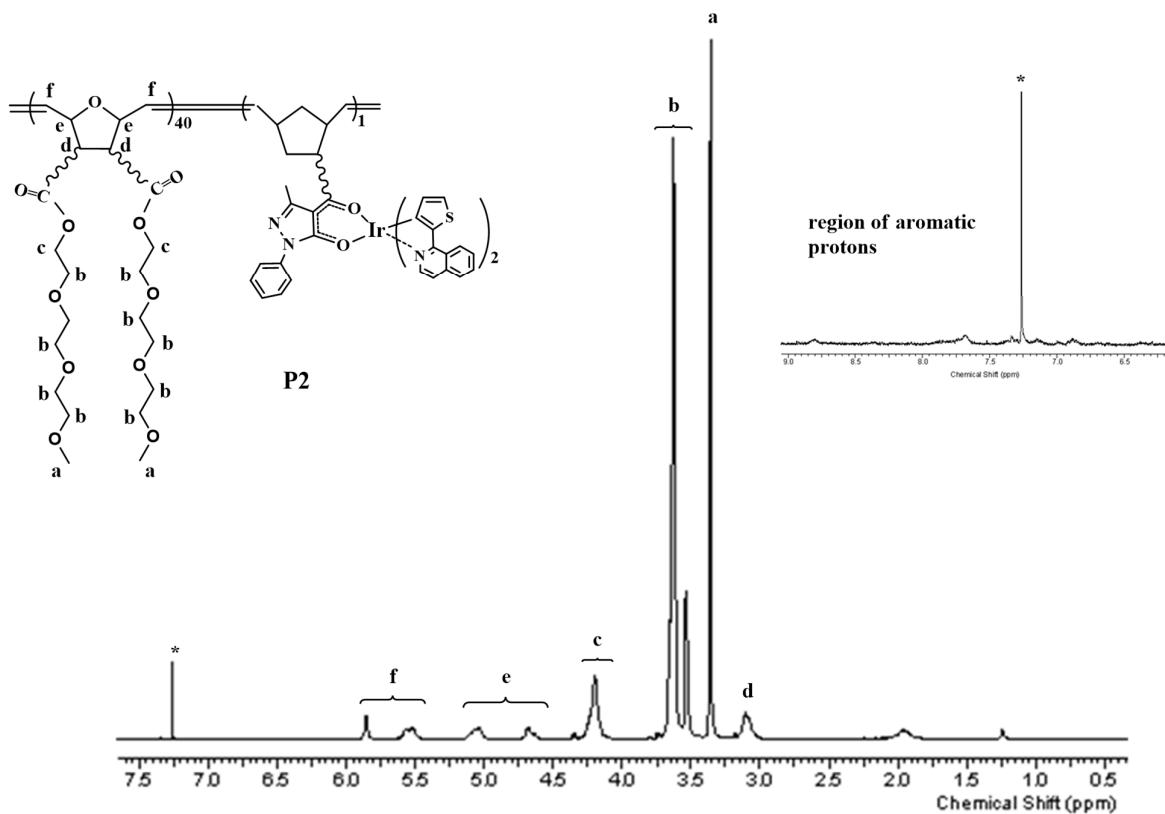
Leonid N. Bochkarev <sup>1,\*</sup>, Yulia P. Parshina <sup>1</sup>, Yana V. Gracheva <sup>1</sup>, Tatyana A. Kovylina <sup>1</sup>, Svetlana A. Lermontova <sup>1</sup>, Larisa G. Klapshina <sup>1</sup>, Aleksey N. Konev <sup>1</sup>, Mikhail A. Lopatin <sup>1</sup>, Maria M. Lukina <sup>2</sup>, Anastasia D. Komarova <sup>2</sup>, Vladislav I. Shcheslavskiy <sup>2,3</sup>, Marina V. Shirmanova <sup>2</sup>

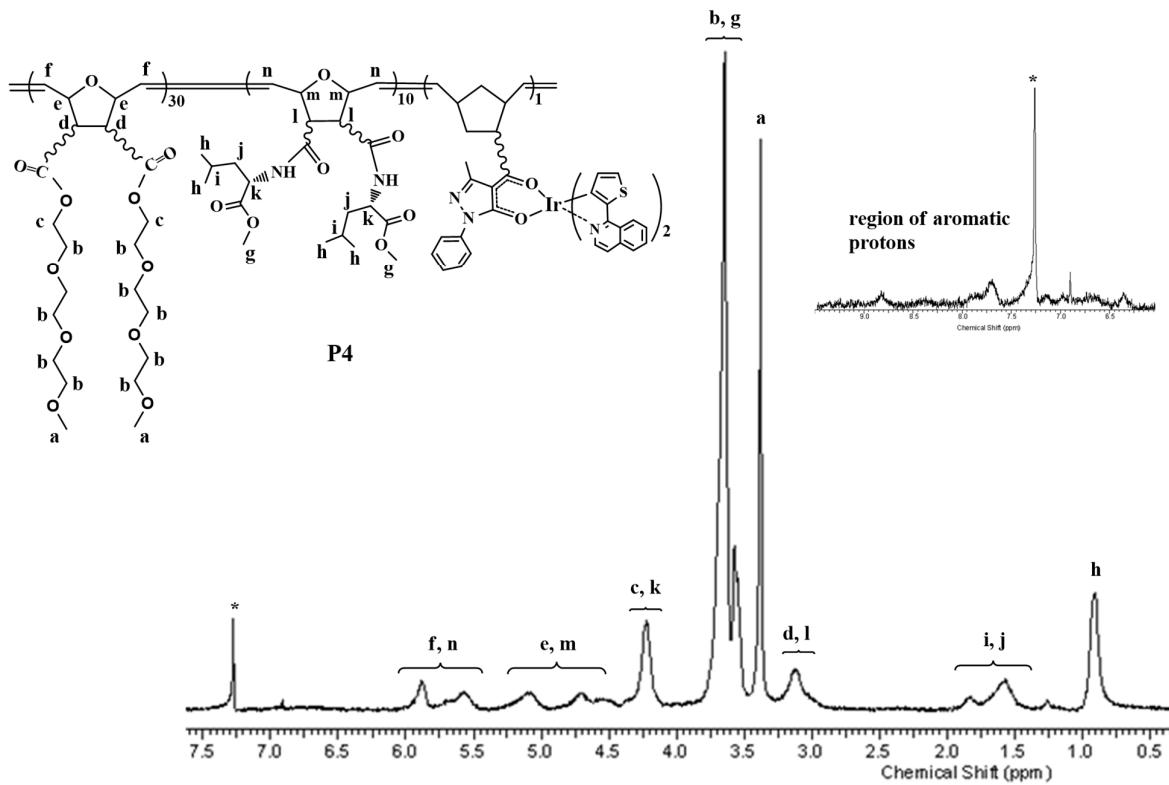
<sup>1</sup> G. A. Razuvaev Institute of Organometallic Chemistry, Russian Academy of Sciences, Tropinina, 49, 603950 Nizhny Novgorod, Russia; jully@iomc.ras.ru (Y.P.P); yanashlyapugina@yandex.ru (Y.V.G.); gluhova@iomc.ras.ru (T.A.K.); lermontovasa@rambler.ru (S.A.L.); klarisa@iomc.ras.ru (L.G.K.); alex-kon@mail.ru (A.N.K.); lopatin@iomc.ras.ru (M.A.L.)

<sup>2</sup> Institute of Experimental Oncology and Biomedical Technologies, Privilzhsky Research Medical University, Minin and Pozharsky Sq. 10/1, 603005 Nizhny Novgorod, Russia; kuznetsova.m.m@yandex.ru (M.M.L.); leemonk76g@gmail.com (A.D.K.); vis@becker-hickl.de (V.I.S.); shirmanovam@mail.ru (M.V.S.)

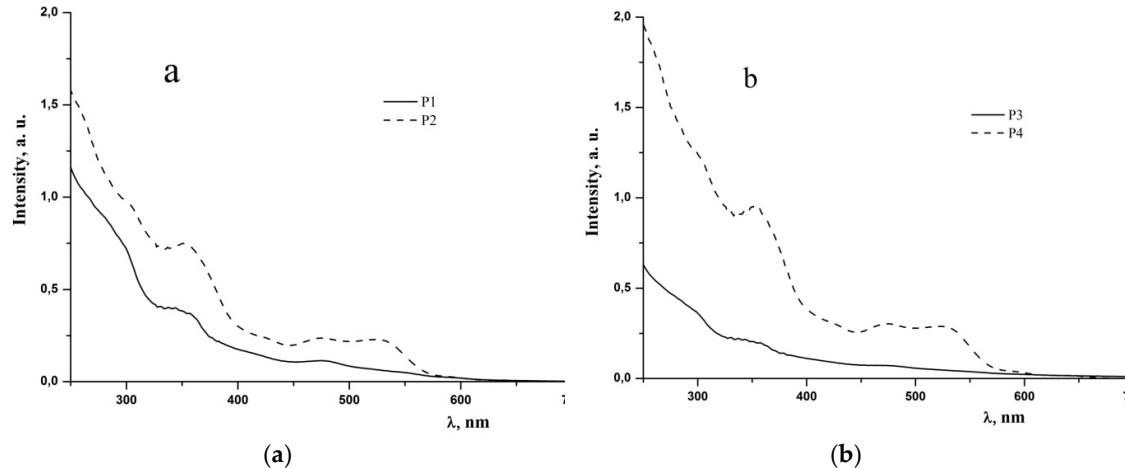
<sup>3</sup> Becker&Hickl GmbH, Nunsdorfer Ring 7-9, 12277 Berlin, Germany

\* Correspondence: lnb@iomc.ras.ru





**Figure S1.** <sup>1</sup>H NMR spectra of polymers P2, P4 in CDCl<sub>3</sub>. (\*) Signal derived from the solvent.



**Figure S2.** Absorption spectra of polymers P1, P2 (a) and P3, P4 (b) in H<sub>2</sub>O solution.

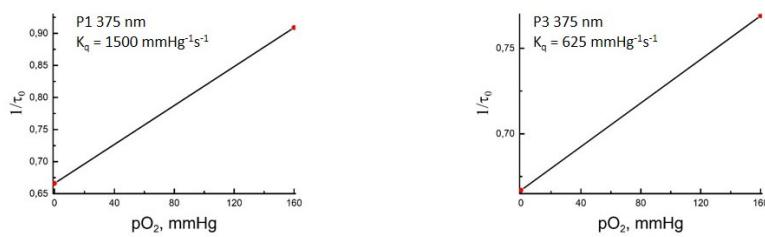
**Table S1.** Photophysical characteristics of polymers P1–P4 in H<sub>2</sub>O solution

Polymer	$\lambda_{\max}^{\text{abs}}/\text{nm}$ (log ε) in H <sub>2</sub> O	$\lambda_{\max}^{\text{em}}/\text{nm}$ (in H <sub>2</sub> O)	Quantum yield, % (in H <sub>2</sub> O)		Chromaticity coordinates in the CIE diagram (x; y)
			a)	b)	
P1	297 (4.60), 344 (4.33), 476 (3.76), 550 (3.42)	sh 344 476 550	618	3.8 2.8	0.66; 0.34

	<b>P2</b>	300	sh	657	0.5	0.3	0.71; 0.29
		(4.49),	353				
		(4.38),	472				
		(3.88),	525				
		(3.87)					
	<b>P3</b>	299	sh	618	2.7	2.0	0.66; 0.34
		(4.56),	346				
		(4.31),	477				
		(3.83),	552				
		(3.55)					
	<b>P4</b>	302	sh	657	0.4	0.2	0.71; 0.29
		(4.49),	353				
		(4.38),	471				
		(3.88),	527				
		(3.86)					

a) Degassed solution.

b) Aerated solution.



**Figure S3.** Stern-Volmer plot for polymers **P1** (left image) and **P3** (right image) in H<sub>2</sub>O solution at 375 nm excitation.