

## Supporting Information

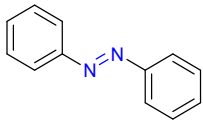
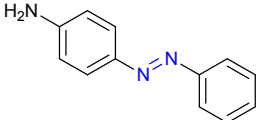
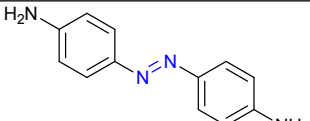
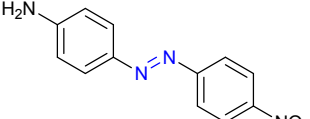
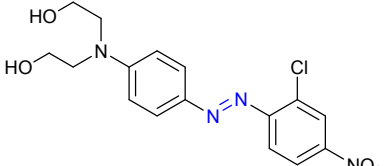
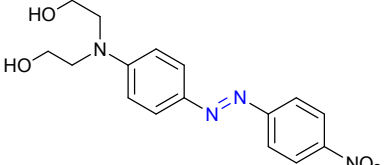
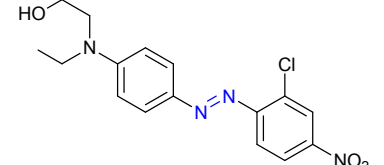
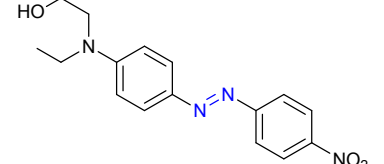
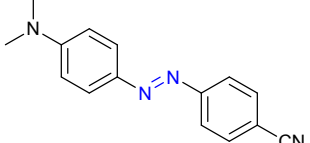
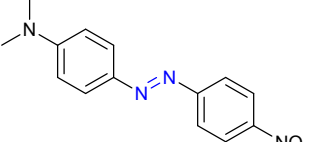
### **Two-photon absorption and two-photon-induced isomerization of azobenzene compounds**

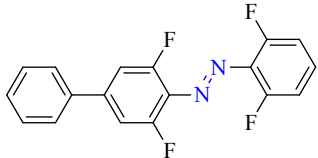
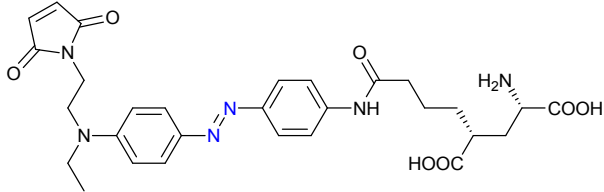
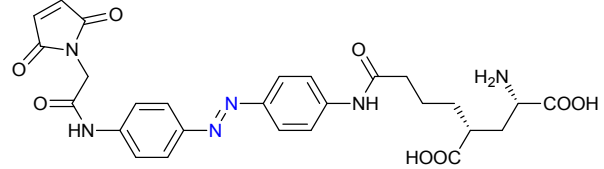
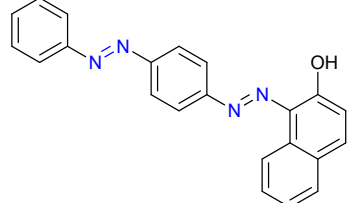
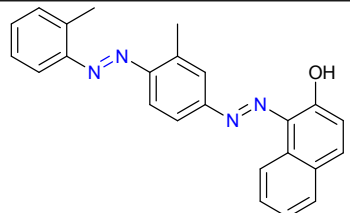
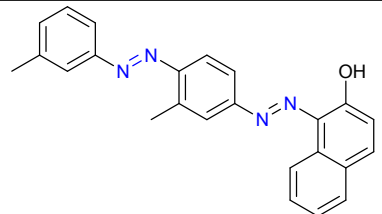
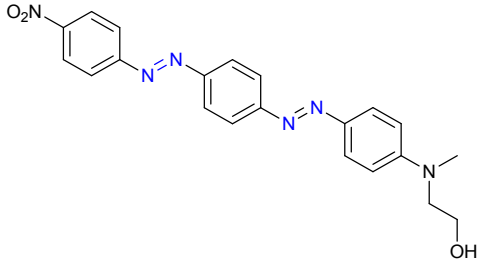
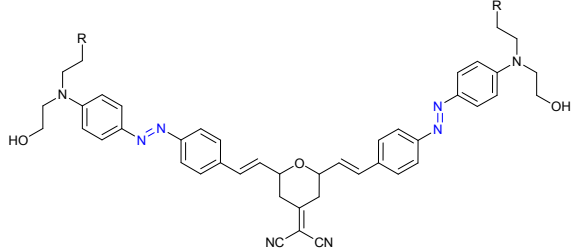
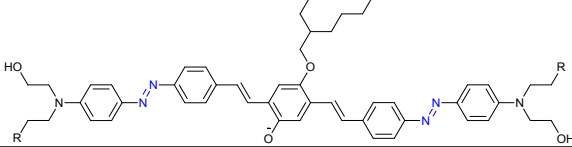
Marta Dudek, Nina Tarnowicz-Staniak, Marco Deiana, Ziemowit Pokładek, Marek Samoć and Katarzyna Matczyszyn\*

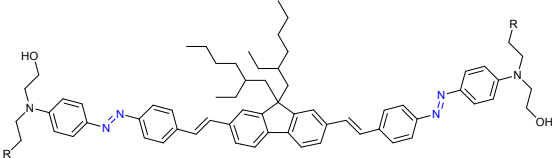
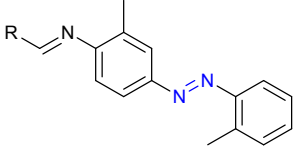
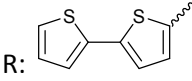
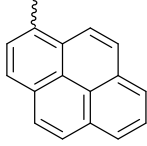
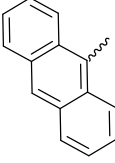
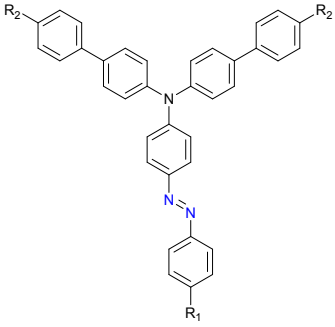
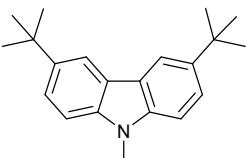
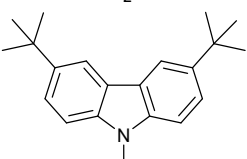

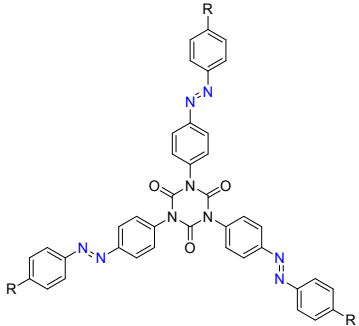
*Advanced Materials Engineering and Modelling Group, Faculty of Chemistry, Wrocław University of Science and Technology, Wyb. Wyspińskiego 27, 50-370 Wrocław, Poland*

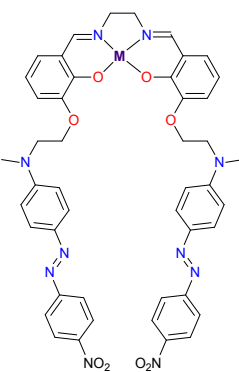
Corresponding authors: [katarzyna.matczyszyn@pwr.edu.pl](mailto:katarzyna.matczyszyn@pwr.edu.pl) and [marta.ziemianek-dudek@pwr.edu.pl](mailto:marta.ziemianek-dudek@pwr.edu.pl)

**Table S1.** The values of the two-photon absorption cross section,  $\sigma_2$  (GM), determined for azobenzene derivatives.

Structure of the azobenzene derivative	$\sigma_2$ [GM]	$\lambda$ [nm]	Technique	Ref .
	19	775	fs- Z-scan	<b>1</b>
	90	775		<b>1</b>
	30	750		<b>2</b>
	45	775		<b>1</b>
	50	750		<b>2</b>
	120	775		<b>1</b>
	100	750		<b>2</b>
	118	944		<b>3</b>
	410	775		<b>1</b>
	410	750		<b>2</b>
	270	775		<b>1</b>
	185	750		<b>2</b>
	490	775		<b>1</b>
	490	750		<b>2</b>
	280	775		<b>1</b>
	150	750	<b>2</b>	
	77	944	<b>3</b>	
	178	973	<b>3</b>	

	7.1	640	bleach signal	<b>4</b>
	~10	750	fs-WLC <sup>a</sup>	<b>5</b>
	~80	850		<b>5</b>
	220	775	fs-Z-scan	<b>6</b>
	250	775		
	260	775		
	360	775		
	R=H: 298	780		<b>7</b>
	R=OH: 211			
	R=H: 1234	780		<b>7</b>
	R=OH: 987			

	R=H: 1251 R=OH: 1058	780		<b>7</b>
	R: 	826	600	<b>8</b>
R: 	829.3			
R: 	578.2			
	R <sub>1</sub> : NO <sub>2</sub> R <sub>2</sub> : 	~ 125	~ 950	<b>9</b>
R <sub>1</sub> : CN R <sub>2</sub> : 	~ 250	~ 870		
R <sub>1</sub> : CN R <sub>2</sub> : 	~ 125	~ 920		
	R=H	52	700	<b>10</b>
R=NO <sub>2</sub>	124	670		
R=NMe <sub>2</sub>	145	825		

	M = Cu	~ 400	~ 1000	<b>11</b>
	M=Ni	~ 400	~ 1000	

a) WLC - white-light continuum based method for measuring  $\sigma_2$

#### References:

1. L. De Boni, J. J. Rodrigues, D. S. dos Santos, C. H. T. P. Silva, D. T. Balogh, O. N. Oliveira, S. C. Zilio, L. Misoguti and C. R. Mendonça, *Chemical Physics Letters*, 2002, **374**, 684.
2. L. De Boni, L. Misoguti, S. C. Zilio and C. R. Mendonça, *ChemPhysChem*, 2005, **6**, 1121-1125.
3. L. Antonov, K. Kamada, K. Ohta and F. S. Kamounah, *Physical Chemistry Chemical Physics*, 2003, **5**, 1193-1197.
4. J. Moreno, M. Gerecke, A. L. Dobryakov, I. N. Ioffe, A. A. Granovsky, D. Bléger, S. Hecht and S. A. Kovalenko, *The Journal of Physical Chemistry B*, 2015, **119**, 12281-12288.
5. E. C. Carroll, S. Berlin, J. Levitz, M. A. Kienzler, Z. Yuan, D. Madsen, D. S. Larsen and E. Y. Isacoff, *Proceedings of the National Academy of Sciences of the United States of America*, 2015, **112**, E776-E785.
6. A. A. Andrade, S. B. Yamaki, L. Misoguti, S. C. Zilio, T. D. Z. Atvars, O. N. Oliveira and C. R. Mendonça, *Optical Materials*, 2004, **27**, 441-444.
7. R. D. Breukers, S. Janssens, S. G. Raymond, M. D. H. Bhuiyan and A. J. Kay, *Dyes and Pigments*, 2015, **112**, 17-23.
8. W. Xu, W. Wang, J. Li, Q. Wu, Y. Zhao, H. Hou and Y. Song, *Dyes and Pigments*, 2019, **160**, 1-8.
9. E. Piovesan, L. De Boni, E. Ishow and C. R. Mendonça, *Chemical Physics Letters*, 2010, **498**, 277-280.
10. Z. Pokladek, M. Dudek, O. Mongin, R. Métivier, P. Mlynarz, M. Samoc, K. Matczyszyn and F. Paul, *ChemPlusChem*, 2017, **82**, 1372-1383.
11. U. M. Neves, L. De Boni, Z. Ye, X. R. Bu and C. R. Mendonça, *Chemical Physics Letters*, 2007, **441**, 221-225.