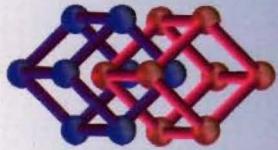


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Synthesis of heteronuclear sandwich-type complexes of lanthanides with phthalocyanines

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Tetrapyrrole complexes are of special interest for materials chemistry. Among the wide range of phthalocyanines heteronuclear triple-deckers play a special role. When triple-deckers are formed by paramagnetic lanthanides, the coupling between unpaired f-electrons is observed. Together with large magnetic anisotropy, it makes these complexes promising for single-molecule magnet materials (SMM). However, in contrast to widely studied homonuclear complexes, heteronuclear tris-phthalocyaninates still remain relatively unexplored. Particularly, this is because of the lack of selective synthetic strategy toward complexes bearing two different metal.

Previously, we have found a new efficient reagent for the synthesis of heteroleptic sandwich phthalocyaninates – diphthalocyaninatolanthanum LaPc₂ which can be also effectively used for the synthesis of heteronuclear triple-deckers.^{1,2}

In this work the developed early approach was applied to phthalocyanines with different substituent's nature including bulky butoxy groups and crown-ethers (Fig.1). The Y(III), Gd(III) and Tb(III) in different ligand environment were used as metal centres. Terbium(III) is of special interest as a very promising cation for SMM.³ All target compounds were obtained in good yield (50-60%).

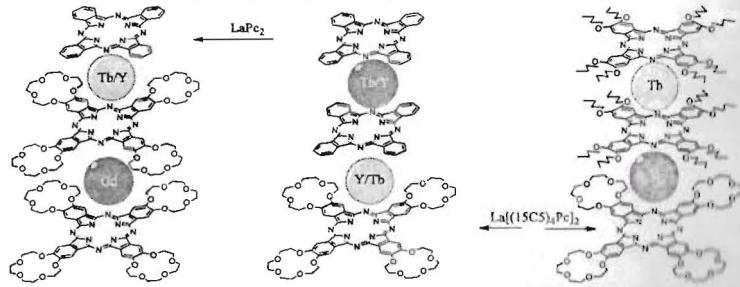


Figure 1.

Acknowledgements

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3. Holmberg R.J., Polovkova M.A., Martynov A.G., Gorbunova Yu.G., Murugesu M., Dalton Trans., **2016**, *45*, 9320-9327.

piece 19

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12:10-12:30	OP53 S.Chorazy	OP61 E.Treytakov	Y06 E.Lider
OP54	D.Roitershtein	OP62 D.Luneau	Y07 A.Sinelshchikova
12:30-12:50	OP55 A.Vologzhanina	OP63 T.Rudneva	Y08 V.Kharitonov
12:50-13:10	OP59 Yu.Torubaev	OP64 P.González-Herrero	Y09 T.Pietrzak
13:10-13:30	OP60 A.Burg		Y010 B.Akhmadieev
17:40 - 17:50	Dia-M LCC A.Shumeev	IL 9 A.Tarasov	IL 10 D.Valyaev
17:50 - 18:05	Y011 E.Yudina	Y014 R.Böser	Y016 D.Campillo
		Y015 A.Zuyagina	Y017 E.Kuchuk
		Y016 Ju.Shakirova	Y018 A.Passera
		FP23	FP24
		FP25 - FP26	
19:00-20:00			
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