

**Synthesis of Bolaamphiphiles and Yoctowells with a Porphyrin
Bottom on Aminated Silica Particles Containing Long-distance
Photoactive Redox Pairs and Rigid Crust**

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by

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**To my Parents, Wife
and
the Memory of my Grandfather (Narshigrao Bhosale)**

*"If you want to conquer the ocean and reach out for new continents
don't tell your men to get wood and nails to build a ship,
just instill in them the yearning for the expanse of the seas and distant lands"*

Antoine de Saint-Exupéry

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List Of Publication

- 1. Nanowells on Silica Particles in Water Containing Long-Distance Porphyrin Heterodimers**
Li, G.; Bhosale, Sheshanath V.; Wang, T.; Hackbarth, S.; Roeder, B.; Siggel, U.; Fuhrhop, J.-H.; *J. Am. Chem. Soc.*; (Article); 125(35); **2003**; 10693-10702.
- 2. Immobile Crust Made of Tyrosine, Norepinephrine, Cellobiose and Other Rigid edge Amphiphiles on the Hydrophobic walls of Nanowells.** Sheshanath Bhosale, Guangtao Li, Fengting Li, Tianyu Wang, Rainer Ludwig, Thomas Emmmler, Gerd Buntkowsky, Jürgen-Hinrich Fuhrhop (to be submitted)
- 3. Light-induced Charge Separation over Distance of 6, 10, 15 Å in Water- and Solvent Filled Nanowells.** Sheshanath Bhosale, Matthias Mayer Hackbarth, S.; B. Roeder, Sidhanath Bhosale, Tianyu Wang, Jürgen-Hinrich Fuhrhop (under preparation)

Other publication

- 4. Slow Motion, Trapping and Sorting of Water- and Chloroform-Soluble Porphyrins in Nanowells.** Sheshanath Bhosale, Sidhanath Bhosale, Tianyu Wang, Guangtao Li, Ulrich Siggel and Jürgen-Hinrich Fuhrhop *J. Am. Chem. Soc.*; (Article); **2004**, 126, 13111-13118.
- 5. Gram-Scale Synthesis of Submicrometer-Long Polythiophene Wires in Mesoporous Silica Matrices.** Guangtao Li, Sheshanath Bhosale, Tianyu Wang, Yang Zhang, Hesun Zhu, Jürgen-Hinrich Fuhrhop;
Angewandte Chemie International Edition; 42(32), **2003**, 3818-3821
Angewandte Chemie **2003**, 115 (32), 3948-3951
- 6. Functional Nanowells on Silicate Particles.** Sidhanath Bhosale, Sheshanath Bhosale, Tianyu Wang, Jürgen-Hinrich Fuhrhop. (to be submitted)
- 7. Short- and long-distance porphyrin heterodimers in bulk aqueous solution and nanowells.** Jürgen-Hinrich Fuhrhop, Tianyu Wang, Sheshanath Bhosale and Sidhanath Bhosale *Journal of Porphyrin and Phthalocyanine* **2004**, 8, 120-124.

- 8. Completely reversible aggregation of nanoparticles by varying the pH.**
Guangtao Li, Tianyu Wang, Sheshanath Bhosale, Yang Zhang, Jürgen-Hinrich Fuhrhop; *Colloid & Polymer Science* **2003**; 281 (11); 1099-1103.
- 9. Porphyrin–acetylene–thiophene polymer wires.** Guangtao Li , Tianyu Wang , Andrea Schulz, Sheshanath Bhosale, Matthias Lauer, Pamela Espindola, Jürgen Heinze and Jürgen-Hinrich Fuhrhop; *Chem. Commun.*, **2004**, (5), 552 – 553.
- 10. Template synthesis of functionalized polystyrene in ordered silicate channels**
Guangtao Li, Sheshanath Bhosale, Sidhanath Bhosale, Fengting Li, Yihe Zhang, Ruirong Guo , Hesun Zhu and Jürgen-Hinrich Fuhrhop *Chem. Commun.*, **2004**, (15), 1760-1761.

Table of Contents

Chapter 1 Introduction	1
Chapter 2 Synthesis of Yoctowells Constituents	
2.1. Introduction	11
2.2. Synthesis of 10 Å- bolaamphiphile	20
2.3. Synthesis of 5 Å- bolaamphiphile	27
2.4. Synthesis of octa-phosphonate porphyrin	31
2.5. Synthesis of <i>meta</i> -tetraphyenylyl-tetracarboxy-porphyrin	38
Chapter 3 Preparation of Aminated Silica Colloidal Particles	
3.1 Introduction	40
3.2 Preparation of amino modified silica colloids	42
3.3.1 Monomeric porphyrin dots on aminated silica colloids	44
3.3.2 pH Dependent aggregation of particles	45
3.4 Conclusion	47
Chapter 4 Fluorescence Quenching and Size Selective Heterodimerization of a Porphyrin in the Yoctowells	
4.1 Introduction	48
4.2 Construction of yoctowells on silica colloidal particles.	50
4.3 Confirmation of 2 nm gap (Yoctowells) by fluorescence quenching experiments	53
4.4 Study of yoctowells	
4.4.1 Blocking effect of tyrosine in yoctowells	58
4.4.3 Triplet state spectroscopy	59
4.5 Methylammonium groups at the solid walls of nanometer water-filled yoctowells	
4.5.1 Michael addition of methylamine to the walls	62
4.5.2 Confirmation of heterodimers by fluorescence quenching experiments	63
4.6 Fluorescence decay measurements	66

4.7 Conclusion	71
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Chapter 5 Immobile Crust Made of Tyrosine, Norepinephrine, Cellobiose and Other Rigid Edge Amphiphiles on the Hydrophobic Walls of Yoctowells.

5.1 Introduction	72
5.2 Blocking effect of neurotransmitters	78
5.3 Radioactive measurements of labelled tyrosine with in the yoctowells	76
5.4 Characterization of a D ₂ O dimer by infrared spectroscopy	81
5.5 Solid State ¹³ C- and ¹ H-NMR spectroscopy	
5.5.1 Solid State NMR measurements	82
5.5.2 H/D exchange experiments	85
5.6 Discussion	87
5.7 Conclusion	90

Chapter 6 Light-induced charge Separation over Distances of 5, 10 and 15 Å in water- and Solvent- filled Yoctowells

6.1 Introduction	91
6.2 Heterodimers with in the yoctowells	
6.2.1 Preparation of yoctowells on aminated silica particles	92
6.2.2 Functionalization of walls of yoctowells	93
6.2.3 Construction of porphyrin (26c)- <i>bis</i> -iminoquinone (36) heterodimer within the yoctowells	94
6.3 Results and discussion	98
6.5 Conclusion	107

Chapter 7 Conclusion

7.1 English Conclusion	108
7.2 Deutsche Zusammenfassung	111

Chapter 8 Experimental Part

8.1 Synthesis	114
8.2 Detailed procedures for the preparation of aminated silica particles, yoctowells and with characterization	140
8.4 Abbreviations used	155
Chapter 9 References	156