

Steffen Bähring  
Department of Physics, Chemistry and Pharmacy  
Chemistry and Pharmacy  
SDU Climate Cluster  
Email: sbahring@sdu.dk  
Phone: +4565508406



## Research outputs

### **Supramolecular recognition within a nanosized "Buckytrap" that exhibits substantial photoconductivity**

Sen, S., Ishiwari, F., Kaur, R., Ishida, M., Ray, D., Kikuchi, K., Mori, T., Bähring, S., Lynch, V. M., Saeki, A., Guldi, D. M., Sessler, J. L. & Jana, A., 2023, In: Journal of the American Chemical Society. 145, 2, p. 1031-1039

### **Solvent-Controlled Self-Assembled Oligopyrrolic Receptor**

Wang, F., Larsen, M. C., Bähring, S., Ishida, M., Furuta, H. & Jana, A., 2021, In: Molecules. 26, 6, 13 p., 1771.

### **Ratiometric turn-on fluorophore displacement ensembles for nitroaromatic explosives detection**

Lee, J. Y., Root, H. D., Ali, R., An, W., Lynch, V. M., Bähring, S., Kim, I. S., Sessler, J. L. & Park, J. S., 18. Nov 2020, In: Journal of the American Chemical Society. 142, 46, p. 19579-19587

### **Condition-Dependent Coordination and Peroxidase Activity of Hemin- $\text{A}\beta$ Complexes**

Bacchella, C., Brewster, J. T., Bähring, S., Dell'Acqua, S., Root, H. D., Thiabaud, G. D., Reuther, J. F., Monzani, E., Sessler, J. L. & Casella, L., 30. Oct 2020, In: Molecules. 25, 21, 13 p., 5044.

### **Semiconducting Supramolecular Organic Frameworks Assembled from a Near-Infrared Fluorescent Macrocyclic Probe and Fullerenes**

Kaur, R., Sen, S., Larsen, M. C., Tavares, L., Kjelstrup-Hansen, J., Ishida, M., Zieleniewska, A., Lynch, V. M., Bähring, S., Guldi, D. M., Sessler, J. L. & Jana, A., 1. Jul 2020, In: Journal of the American Chemical Society. 142, 26, p. 11497-11505

### **Self-Assembled Cagelike Receptor That Binds Biologically Relevant Dicarboxylic Acids via Proton-Coupled Anion Recognition**

Wang, F., Sen, S., Chen, C., Bähring, S., Lei, C., Duan, Z., Zhang, Z., Sessler, J. L. & Jana, A., 2020, In: Journal of the American Chemical Society. 142, 4, p. 1987-1994

### **Tetrathiafulvalene-calix[4]pyrrole: a versatile synthetic receptor for electron-deficient planar and spherical guests**

Bähring, S., Root, H. D., Sessler, J. L. & Jeppesen, J. O., 14. Mar 2019, In: Organic & Biomolecular Chemistry. 17, 10, p. 2594-2613

### **Functionalised tetrathiafulvalene- (TTF-) macrocycles: recent trends in applied supramolecular chemistry**

Jana, A., Bähring, S., Ishida, M., Goeb, S., Canevet, D., Sallé, M., Jeppesen, J. O. & Sessler, J. L., 7. Aug 2018, In: Chemical Society Reviews. 47, 15, p. 5614-5645

### **Very Strong Binding for a Neutral Calix[4]pyrrole Receptor Displaying Positive Allosteric Binding**

Duedal, T., Nielsen, K., Olsen, G., Burgdorf Guldager Rasmussen, C., Kongsted, J., Levillain, E., Breton, T., Miyazaki, E., Takimiya, K., Bähring, S. & Jeppesen, J. O., 17. Feb 2017, In: Journal of Organic Chemistry. 82, 4, p. 2123-2128

### **A Bis-Calix[4]pyrrole Enzyme Mimic that Constrains Two Oxoanions in Close Proximity**

He, Q., Kelliher, M., Bähring, S., Lynch, V. M. & Sessler, J., 2017, In: Journal of the American Chemical Society. 139, 21, p. 7140-7143

### **Enhanced detection of explosives by turn-on resonance Raman upon host-guest complexation in solution and the solid state**

Witlicki, E. H., Bähring, S., Johnsen, C., Solano, M. V., Nielsen, K. A., Silverstein, D. W., Marlatt, C. W., Jensen, L., Jeppesen, J. O. & Flood, A. H., 2017, In: Chemical Communications. 53, 79, p. 10918-10921 4 p.

**Ionic manipulation of charge-transfer and photodynamics of [60]fullerene confined in pyrrolo-tetrathiafulvalene cage**  
Bähring, S., Larsen, K. R., Supur, M., Nielsen, K. A., Poulsen, T., Ohkubo, K., Marlatt, C. W., Miyazaki, E., Takimiya, K., Flood, A. H., Fukuzumi, S. & Jeppesen, J. O., 2017, In: *Chemical Communications*. 53, 71, p. 9898-9901

**Tetrathiafulvalene- (TTF-) Derived Oligopyrrolic Macrocycles**

Jana, A., Ishida, M., Park, J. S., Bähring, S., Jeppesen, J. O. & Sessler, J., 2017, In: *Chemical Reviews*. 117, 4, p. 2641–2710

**Cover Profile: Design and Sensing Properties of a Self-Assembled Supramolecular Oligomer**

Bähring, S., Martín-Gomis, L., Olsen, G., Nielsen, K., Kim, D. S., Duedal, T., Sastre-Santos, A., Jeppesen, J. O. & Sessler, J., 2016, In: *Chemistry - A European Journal*. 22, 6, p. 1869 1 p.

**Design and Sensing Properties of a Self-Assembled Supramolecular Oligomer**

Bähring, S., Gomis, L. M., Olsen, G., Nielsen, K., Kim, D. S., Duedal, T., Sastre-Santos, A., Jeppesen, J. O. & Sessler, J. L., 2016, In: *Chemistry - A European Journal*. 22, 6, p. 1958–1967

**Design and Sensing Properties of a Self-Assembled Supramolecular Oligomer (Chem. Eur. J. 6/2016)**

Bähring, S., Martín-Gomis, L., Olsen, G., Nielsen, K., Kim, D. S., Duedal, T., Sastre-Santos, A., Jeppesen, J. O. & Sessler, J. L., 2016, 1 p.

**Functionalized Calixpyrroles: Building Blocks for Self-Assembly**

Vargas-Zúñiga, G., Sessler, J. & Bähring, S., 2016, *Calixarenes and Beyond*. Neri, P., Sessler, J. & Wang, M-X. (eds.). Switzerland: Springer, p. 285-333

**Use of solvent to regulate the degree of polymerisation in weakly associated supramolecular oligomers**

Bähring, S., Kim, D. S., Duedal, T., Lynch, V. M., Nielsen, K. A., Jeppesen, J. O. & Sessler, J. L., 2014, In: *Chemical Communications*. 50, 41, p. 5497-5499

**$\pi$ -Extended tetrathiafulvalene BODIPY (ex-TTF-BODIPY): A redox switched "on-off-on" electrochromic system with two near-infrared fluorescent outputs**

Bill, N. L., Lim, J. M., Davis, C. M., Bähring, S., Jeppesen, J. O., Kim, D. & Sessler, J. L., 2014, In: *Chemical Communications*. 50, 51, p. 6758-6761

**Coordination-Driven Switching of a Preorganized and Cooperative Calix(4)pyrrole Receptor**

Bähring, S., Olsen, G., Stein, P. C., Kongsted, J. & Nielsen, K. A., 2013, In: *Chemistry - A European Journal*. 19, 8, p. 2768-2775

**Molekylære sensorer**

Bähring, S., 2013, Syddansk Universitet. Det Naturvidenskabelige Fakultet.

**Porphyrins Fused with Strongly Electron-Donating 1,3-Dithiol-2-ylidene Moieties: Redox Control by Metal Cation Complexation and Anion Binding**

Bill, N. L., Ishida, M., Bähring, S., Lim, J. M., Lee, S., Davis, C. M., Lynch, V. M., Nielsen, K. A., Jeppesen, J. O., Ohkubo, K., Fukuzumi, S., Kim, D. & Sessler, J. L., 2013, In: *Journal of the American Chemical Society*. 135, 29, p. 10852–10862

**Acid/Base Controllable Molecular Recognition**

Nielsen, K., Bähring, S. & Jeppesen, J. O., 2011, In: *Chemistry - A European Journal*. 17, 39, p. 11001-11007 7 p.

**A Novel TetraTTF-calix[4]pyrrole Ouroborand for Explosive Detection**

Bähring, S. & Nielsen, K., 7. Jun 2010. 1 p.

**A Novel TetraTTF-calix[4]pyrrole Ouroborand for Explosive Detection**

Bähring, S. & Nielsen, K., 25. May 2010.

## Activities

### **Organic & Biomolecular Chemistry (Journal)**

Bähring, S. (Peer reviewer), Root, H. D. (Peer reviewer), Sessler, J. L. (Peer reviewer) & Jeppesen, J. O. (Peer reviewer)  
8. Feb 2019

### **TetraTTF-Calix[4]pyrrole: A Biomimetic Receptor for Anions, Fullerenes and Electron-Deficient Planar Guests**

Bähring, S. (Guest lecturer)  
10. Jun 2017

### **Journal of the American Chemical Society (Journal)**

He, Q. (Peer reviewer), Kelliher, M. (Peer reviewer), Bähring, S. (Peer reviewer), Lynch, V. M. (Peer reviewer) & Sessler, J. L. (Peer reviewer)  
11. May 2017

### **Thinface: Workshop on lifetime and stability of hybrid and organic devices**

Bähring, S. (Participant)  
21. Apr 2016 → 22. Apr 2016

### **Chemistry - A European Journal (Journal)**

Bähring, S. (Peer reviewer), Olsen, G. (Peer reviewer), Stein, P. C. (Peer reviewer), Kongsted, J. (Peer reviewer) & Nielsen, K. (Peer reviewer)  
7. Jan 2013

### **5th International Symposium on Macrocyclic and Supramolecular Chemistry**

Bähring, S. (Participant)  
6. Jul 2010 → 10. Jul 2010

### **Fourth BIMORE Summer School**

Bähring, S. (Participant)  
21. Jun 2010 → 26. Jun 2010

## Projects

### **Danmarks Frie Forskningsfond - Teknologi og Produktion - Extended-Tetrathiafulvalene-Porphyrin Donor Materials for Organic**

Bähring, S. (Project participant)  
01/09/2020 → 30/09/2023

### **Porphyrin materials for OPV applications**

Greenbank, W. (Col), Madsen, M. (Head coordinator) & Bähring, S. (Head coordinator)  
19/02/2019 → 31/05/2019

### **Uddannelses- og Forskningsministeriet – FTP- Development of New Tetrathiafulvalene-based Donor Constructs Utilizing Supramolecular Electron Transfer Processes - Towards Organic Photovoltaics**

Bähring, S. (Head coordinator)  
01/01/2016 → 30/09/2018

## Teaching and supervision

### **Dithiafulvene-porphyrin conjugates for Dye-Sensitized Solar Cells**

Bähring, S.  
01/09/2019 → 01/08/2020

**Functionalization of the meso-phenyl position of extended tetrathiafulvalene porphyrin for the development of functional materials such as metal-organic frameworks (MOFs)**

Bähring, S.  
01/09/2018 → 31/01/2019

**Further development and optimization of degradable microspheres**

Bähring, S.  
01/09/2019 → 01/08/2020

**Increasing the Pi-conjugation of exTTF Porphyrin with Benzothiadiazole for the Application of Bulk Heterojunction Solar Cells**

Bähring, S.  
01/02/2019 → 31/07/2019

**Increasing the Pi-conjugation of exTTF Porphyrin with Diketopyrrolopyrrole for the Application of Bulk Heterojunction Solar Cells**

Bähring, S.  
01/02/2019 → 31/07/2019

**Ke510: Organic chemical analysis and separation**

Bähring, S.  
31/10/2018 → 05/12/2018

**Ke510: Organic Chemical Analysis and Separation**

Bähring, S.  
22/10/2020 → 30/11/2020

**Ke510: Organic Chemical Analysis and Separation**

Bähring, S.  
15/10/2019 → 29/11/2019

**Ke518: Advanced Organic Synthesis**

Bähring, S.  
25/03/2020 → 15/05/2020

**KE542: Introduction to chemistry - research and application**

Petersen, M., Bähring, S. & Nielsen, U. G.  
01/09/2020 → 19/11/2021

**Ke814: Advanced Organic Synthesis**

Bähring, S.  
25/03/2020 → 15/05/2020

**KE814: Advanced organic synthesis**

Bähring, S.  
01/04/2019 → 31/05/2019

**Ke822: Organic Chemical Analysis and Separation**

Bähring, S.  
09/11/2020 → 24/11/2020

**Synthesis and development of an extended tetrathiafulvalene donor macrocycle**

Bähring, S.  
01/09/2018 → 31/01/2019

**Synthesis and development of improved tetrathiafulvalene donor molecules**

Bähring, S.  
01/02/2018 → 31/05/2018

**Synthesis and investigation of 1,3-dithiole-functionalized heterotriangulenium**

Bähring, S.  
01/02/2019 → 31/05/2019

**Synthesis of tetrakis(tetrathiafulvalene)-calix[4]pyrrole with methyl-substituents**

Bähring, S.  
01/02/2018 → 31/05/2018