



Universiteit  
Leiden  
The Netherlands

## Lipid bilayers decorated with photosensitive ruthenium complexes

Bahreman, A.

### Citation

Bahreman, A. (2013, December 17). *Lipid bilayers decorated with photosensitive ruthenium complexes*. Retrieved from <https://hdl.handle.net/1887/22877>

Version: Not Applicable (or Unknown)  
License: [Leiden University Non-exclusive license](#)  
Downloaded from: <https://hdl.handle.net/1887/22877>

**Note:** To cite this publication please use the final published version (if applicable).

## List of Publications

### **Efficient Synthesis of Pyrrolo[2,1-a]isoquinoline and Pyrrolo[1,2-a]quinoline Derivatives in Aqueous Media**

Kianmehr, E.; Estiri, H.; Bahreman, A.; *J. Heterocycl. Chem.* **2009**, *46*, 1203

### **Ruthenium polypyridyl complexes hopping at anionic lipid bilayers via a supramolecular bond sensitive to visible light**

Bahreman, A.; Limburg, B.; Siegler, M.A.; Koning, R.; Koster, A.J.; Bonnet, S.; *Chem. Eur. J.* **2012**, *18*, 10271.

### **Spontaneous formation in the dark, and visible light-induced cleavage, of a Ru-S bond in water: a thermodynamic and kinetic study**

Bahreman, A.; Limburg, B.; Siegler, M.A.; Bouwman E.; Bonnet, S.; *Inorg. Chem.* **2013**, *52*, 9456.

### **Activation of a photodissociative ruthenium complex by triplet-triplet annihilation upconversion at liposomes**

Askes S.H.C; Bahreman A.; Bonnet S.; *Angew. Chem. Int. Ed.* **2013**, in press.

### **Yellow-light sensitization of a ligand photosubstitution reaction in a ruthenium polypyridyl complex covalently bound to a rhodamine dye**

Bahreman, A.; Cuello-Garibo J. A.; Bonnet S.; *submitted for publication.*

### **Binding of a ruthenium complex to a thioether ligand embedded in a negatively charged lipid bilayer: a two-step mechanism**

Bahreman, A.; Rabe M.; Kros A.; Bruylants G.; Bonnet S.; *submitted for publication.*

### **Light-induced releasing of a cytotoxic ruthenium complex supported at the surface of a liposome drug carrier**

Bahreman A.; Van Geest E.; Heger M.; Balemans C.; Lupica-Spagnolo L.; Bonnet S.; *manuscript in preparation.*



## Curriculum Vitae

Azadeh Bahreman was born in Babol, Iran and grew up in Tehran, Iran. In the last year of high school she became interested in Chemistry while preparing for the national undergraduate entrance examination (Concours). After successfully passing the Concours in 2000, she chose to study pure chemistry in Shahid Beheshti University, Tehran, Iran. After obtaining her bachelor degree she worked in the Tehran International High School as a chemistry laboratory assistant until 2006. She then decided to continue studying chemistry and passed the national graduate entrance exam, to start a MSc's degree in organic chemistry at the University of Tehran. She performed her Master project under the supervision of Dr. E. Kinamehr and worked on the one-pot synthesis of new pyrrolo [1, 2- $\alpha$ ] quinoline derivatives and on synthetic methodology for the ipso-substitution of aryl boronic acids. In parallel, she was cooperating as a part-time research assistant with the Chemical Processes Investigation Center of the Chemical Engineering College of the University of Tehran on the production of industrial amines. After obtaining her Master degree in 2008, she was employed in the Barzegar Zonouz research institute, Tehran, Iran as a research expert to work on a hydroformylation project.

In November 2009 she got a position at the Leiden Institute of Chemistry to pursue her PhD under the supervision of Dr. S. Bonnet and Prof. Dr. E. Bouwman on a multi-disciplinary project in the field of bioinorganic photochemistry. During her PhD she collaborated with several research groups such as the Department of Experimental Surgery of the Academic Medical Center in Amsterdam, and the Molecular and Biomolecular Engineering group at the Free University in Brussels. She attended several postgraduate courses and schools organized by the Holland Research School of Molecular Chemistry (HRSMC). In addition, she participated in general training courses such as Effective communication, Time management, and Scientific Integrity organized by the Leiden University graduate school. As a part of the PhD program, she also contributed in assisting several general and organic practical courses and also supervised several MSc students (Lucia Lupica Spagnolo, Jordi-Amat Cuello-Garibo, Rehana Sukhrie, Erik van Geest), and BSc students (Matthew Everhart, Collin Balemans, Michiel Langerman).

She presented her PhD work at several national and international conferences including the HRSMC annual symposia (2010 and 2013 Leiden, 2011 Amsterdam), the Leiden Institute of Chemistry annual Reedijk symposium (2010, Leiden), the NWO-CW Organic Chemistry and Synthesis Study Group Meetings (2010 and 2012 Lunteren), the CHAINS conference (2011, Utrecht), the COST meeting “Supramolecular chemistry in water” (2012, Riccione, Italy), the KNCV Wageningen meeting (2012, Wageningen), and the Gordon Research Photochemistry Conference (Boston, MA, USA). She was awarded two poster prizes in two consecutive HRSMC symposia.

# **Nawoord**

## **(Acknowledgements)**

The COST action 1005 “Supramolecular chemistry in water” (European Cooperation in Science and Technology) is acknowledged for providing a grant to attend a COST meeting in Italy, and a grant for a short-term scientific mission in Belgium. Dr. Gilles Bruylants (Université Libre de Bruxelles, Belgium) is kindly acknowledged for his hospitality and supervising in Brussels. Dr. Alexander Kros and Martin Rabe are acknowledged for the scientific discussion and their help with Langmuir-Blodgett monolayer surface pressure measurements. Dr. Michal Heger (Academic Medical Center, University of Amsterdam) is acknowledged for his scientific help with in vitro tests and performing experiments on HepG2 cells. Dr. Maxime Siegler (Johns Hopkins University, USA) determined the crystal structures of the compounds described in Chapter 2 and 3, Jos van Brussel carried out elemental analyses and ICP-OES measurements, John van Dijk performed ESI-Mass analysis, and Hans van den Elst performed HR-Mass spectrometry analysis; they are all kindly acknowledged for their help. Prof. Abraham Koster, Dr. Roman Koning, and Christoph Diebold (Electron Microscopy group, Leiden University Medical Center) performed Cryo-transmission electron microscopy of liposome samples are kindly acknowledged. Bart Limburg contributed to Chapters 2 and 3, Erik van Geest contributed to Chapter 5 and Dutch Summary, Collin Balemans and Lucia Lupica Spagnolo contributed to Chapter 5, and Jordi-Amat Cuello-Garibo contributed to Chapter 6; are kindly acknowledged. Dr. Pablo Contreras-Carballada for the scientific discussion about Chapter 6, Hans den Dulk, Dr. Bianka Siewert, Dr. Samantha Higgins, and Steven Hiemstra for their help to perform cell experiments in Leiden, and finally Geert Daudey for synthesizing a WALP peptide used for part of my research; they are all kindly acknowledged.

