



*Program for the symposium on*

*Poly(2-oxazoline)s and related pseudo-polypeptide structures*

*ACS National meeting, San Diego, March 27-29, 2012*

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*Organizers: Scott Grayson, Helmut Schlaad, Richard Hoogenboom*

## Welcome

The symposium will cover the field of poly(2-oxazoline)s and related pseudo-polypeptide structures that are currently reemerging based on their tunable properties and excellent biocompatibility. In fact, poly(2-methyl-2-oxazoline) and poly(2-ethyl-2-oxazoline) have similar stealth behavior as poly(ethylene oxide) while offering superior functionalization possibilities via copolymerization of different 2-oxazoline monomers to introduce, e.g., clickable side chains. Moreover, thermoresponsive poly(2-oxazoline)s with tunable phase transition temperatures are easily accessible by variation of the side chains.

Poly(2-oxazoline)s can be considered to be pseudo-polypeptides based on their similarity to polypeptides as is the case for other pseudo-polypeptides, such as N-substituted polypeptides as well as poly( $\beta$ -peptide)s. The tertiary amides in poly(2-oxazoline)s and N-substituted polypeptides as well as the non-natural amino acids in poly( $\beta$ -peptide)s render them more stable than polypeptides while having similar biocompatibility. The scope of this symposium covers all these pseudo-polypeptides to stimulate further developments in the field, both synthetically as well as with regard to applications.

We believe that the recently emerging specialty applications of poly(2-oxazoline)s and pseudo-polypeptides in combination with their synthetic versatility will further boost their widespread usage in polymer science in the coming years. This symposium will, therefore, provide a discussion forum for scientists working with poly(2-oxazoline)s and will demonstrate their potential to people interested in this class of polymers.

### **Enjoy the symposium!**

#### **Helmut Schlaad**

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**Oral Session AM**

Location: Manchester Grand Hyatt

Room: Mohsen A,B

Presiders: Helmut Schlaad, Scott Grayson

Pres Time	Pub #	Presentation Title
8:00 am		Introductory Remarks
8:10 am	161	<a href="#">Early studies on oxazoline chemistry: Structure/property relationships and applications</a> <u>Morton Lit</u>
9:10 am		Intermission
9:30 am	162	<a href="#">Recent trends in poly(2-oxazoline)s</a> <u>Richard Hoogenboom</u>
10:30 am	163	<a href="#">Synthesis and self-assembly of sequence-specific peptoid polymers - a tutorial</a> Helen Tran, <u>Ronald N. Zuckermann</u>

**Oral Session PM**

Location: Manchester Grand Hyatt

Room: Mohsen A,B

Presiders: Marcus Weck, Richard Hoogenboom

Pres Time	Pub #	Presentation Title
1:00 pm	192	<a href="#">Our compelling and intriguing journey with poly(2-oxazoline)s: Past, present, and future</a> <u>Donald A. Tomalia, David M. Hedstrand</u>
1:30 pm	193	<a href="#">Poly(oxazoline)-supported catalysts</a> Yu Liu, Jie Lu, <u>Marcus Weck</u>
1:55 pm	194	<a href="#">Poly(2-oxazoline)-based hydrogels: Influence of the monomers on the swelling degrees</a> <u>Andrew M Kelly, Angela Hecke, Bianca Wirnsberger, Christina Wappl, Frank Wiesbrock</u>
2:15 pm	195	<a href="#">Hydrogels from poly(2-methyl-2-oxazoline)-co-(2-decenyl-2-oxazoline) via thiol-ene photocuring</a> <u>Tim R Dargaville, Rebecca Forster, Brooke L Farrugia, Kristian Kempe, Ulrich S Schubert, Richard Hoogenboom</u>
2:35 pm		Intermission
2:55 pm	196	<a href="#">Biologically active nylon-3 copolymers</a> <u>Samuel H. Gellman</u>
3:15 pm	197	<a href="#">Functionalized polyoxazoline and their self association in water</a> <u>Gisele Volet, Catherine Amiel, Thanh-Xuan Lav, Lucien Marx</u>

Pres Time	Pub #	Presentation Title
3:35 pm	198	<a href="#">Synthesis of cyclic poly(ethylene imine) and exact linear analogs</a> Mallory A. Cortez, Brian J. Cafferty, <u>Scott M. Grayson</u>
4:00 pm	199	<a href="#">Selective hydrolysis of (co)poly(2-oxazoline)s for the obtention of linear (co)poly(ethylene imine)s</a> <u>Victor R. de la Rosa</u> , Huub P. C. van Kuringen, Richard Hoogenboom
4:20 pm	200	<a href="#">Clickable amphiphilic triblock copolymers</a> <u>Michael J Isaacman</u> , Kathryn A Barron, Luke Theogarajan
4:40 pm	201	<a href="#">Mass spectrometric characterization of poly(2-oxazoline)s</a> Esra Altuntas, Anja Baumgaertel, Kristian Kempe, Christine Weber, Katrin Knop, <u>Anna C Crecelius</u> , Richard Hoogenboom, Ulrich S. Schubert

**POLY**

Poster session

Tuesday, March 27, 2012

**Poster Session Evening**

Location: Manchester Grand Hyatt

Room: Mohsen A,B

Time: 7:00 pm – 9:00 pm

- 300 [Poly\(2-oxazoline\)s as kinetic gas hydrate inhibitors](#)  
Luca Del Villano, Roald Kommedal, Martin W. M. Fijten, Ulrich S. Schubert, Richard Hoogenboom, Malcolm A Kelland
- 301 [Poly\(2-oxazoline\) bottle-brush brushes for the control of protein adsorption and cell adhesion](#)  
Ning Zhang, Tilo Pompe, Robert Luxenhofer, Carsten Werner, Rainer Jordan
- 302 [Biofunctionalization of patterned poly\(2-oxazoline\) bottle-brush-brushes on diamond](#)  
Naima A Hutter, Andreas Reitingger, Jose A Garrido, Rainer Jordan
- 303 [Poly\(2-oxazoline\)s as high-capacity multi-drug delivery systems\[p\]](#)  
Anita Schulz, Yingchao Han, Zhijian He, Tatiana K. Bronich, Alexander V. Kabanov, Robert Luxenhofer, Rainer Jordan
- 304 [Poly\(2-oxazoline\) hydrogels: Synthesis and applications](#)  
Petra J. M. Bouten, Huub P. C. Van Kuringen, Jan C. M. Van Hest, Richard Hoogenboom
- 305 [Water-soluble optically active poly\(2-oxazoline\)s](#)  
Stephan Huber, Julia Hytry, Jing Tong, Robert Luxenhofer, Alexander V Kabanov, Rainer Jordan
- 306 [Synthesis of a sarcosine decablock polymer](#)  
Corinna Fetsch, Robert Luxenhofer
- 307 [Initiation selectivity during CROP: Effect of  \$\pi\$ -electrons in 2-oxazoline rings](#)  
Andrew M Kelly, Thomas Bodner, Lisa Ellmaier, Verena Schenk, Jörg Albering, Frank Wiesbrock
- 308 [STOP-and-GO polymerization of sarcosine N-carboxyanhydride](#)  
Michael Schiffmann, Robert Luxenhofer

**Oral Session AM**

Location: Manchester Grand Hyatt

Room: Mohsen A,B

Presiders: Francoise Winnik, Richard Hoogenboom, Takahiro Sato

Pres Time	Pub #	Presentation Title
8:00 am	361	<a href="#">Stimuli sensitive polyoxazolines: From polymerization mechanism to biological applications</a> <u>Andrzej Dworak</u>
8:30 am	362	<a href="#">Thermosensitive copolymers of 2-ethyl-2-oxazoline and 2-(4-aminophenyl)-2-oxazoline</a> <u>Juraj Kronek, Nadežda Petrenčíková, Jozef Lustoň, Marcel Mikulec, Zuzana Kroneková</u>
8:50 am	363	<a href="#">Star-shaped block copolymers with a responsive poly(2-ethyl-2-oxazoline) shell: Synthesis and self-assembly in dilute solution</a> <u>Felix H Schacher, Tobias Rudolph, Katrin Knop, Kristian Kempe, Ulrich S Schubert</u>
9:10 am	364	<a href="#">Phase separation behavior in aqueous solutions of polyoxazoline homopolymer and block copolymer</a> <u>Takahiro Sato, Rintaro Takahashi, Xingping Qiu, Francoise M. Winnik</u>
9:30 am		Intermission
9:50 am	365	<a href="#">Poly(2-isopropyl-2-oxazoline) and poly(N-isopropylacrylamide) and their derivatives: A comparative study of their solution properties in water</a> <u>Francoise M Winnik</u>
10:15 am	366	<a href="#">Association and phase separation of telechelic perfluorodecyl end-capped poly(2-isopropyl-2-oxazoline) in water</a> <u>Na Xue, Françoise M. Winnik</u>
10:35 am	367	<a href="#">Thermo-responsive comb shaped Poly(2-oxazoline)s</a> <u>Christine Weber, Richard Hoogenboom, Ulrich S. Schubert</u>
10:55 am	368	<a href="#">Aqueous solution properties of comb-like linear poly(ethylene imine)/poly(2-ethyl-2-oxazoline) based polymers: Impact of temperature and polymer composition</a> <u>Silviya Halacheva, Gareth J. Price, Vasil M. Garamus</u>

**Oral Session PM**

Location: Manchester Grand Hyatt

Room: Mohsen A,B

Presiders: Helmut Schlaad

Pres Time	Pub #	Presentation Title
1:00 pm	395	WITHDRAWN
1:25 pm	396	<a href="#">Controlling the morphology of micelles prepared from triblock copoly(2-oxazoline)s</a> Jean-François Gohy, Richard Hoogenboom, Kristian Kempe, Hanneke M. L. Thijs-Lambermont, Stephanie Hoepfener, Charles-André Fustin, Ulrich S. Schubert
1:50 pm	397	<a href="#">Amphiphilic poly(2-methyl-2-oxazoline) in solution and at interfaces</a> Catherine Amiel, Gisèle Volet
2:15 pm	398	<a href="#">Amphiphilic telechelic ABA triblock copolymers based on oxazolines</a> Christian Krumm, Joerg C. Tiller
2:35 pm		Intermission
2:55 pm	399	WITHDRAWN
3:20 pm	400	<a href="#">Formation of poly(2-ethyl-2-oxazoline) fibers in aqueous solutions</a> Pinar Tatar Güner, Annamaria Miko, A. Levent Demirel
3:40 pm	401	<a href="#">Poly(cyclic imino ether)s beyond simple 2-substituted-2-oxazolines</a> Meta M Bloksma, Ulrich S Schubert, Richard Hoogenboom
4:00 pm	402	<a href="#">Poly(2-oxazoline)s: An all-round drug delivery system?</a> Anita Schulz, Yingchao Han, Zhijian He, Tatiana K. Bronich, Alexander V. Kabanov, Robert Luxenhofer, Rainer Jordan
4:20 pm	403	<a href="#">Organosoluble polymer enzyme conjugates with poly(oxazoline)s</a> Stefan Konieczny, Joerg C Tiller
4:40 pm	404	<a href="#">Poly(2-ethyl-2-oxazoline) as excipient for pharmaceutical processing</a> Bruno De Geest, Richard Hoogenboom.

**Social Event Evening**

Location: Restaurant de'Medici

Adress: 815 Fifth Avenue, San Diego

Arrival: 7:00 – 7:30 pm



**Oral Session AM**

Location: Manchester Grand Hyatt

Room: Mohsen A

Presiders: Frank Wiesbrock, Rainer Jordan

Pres Time	Pub #	Presentation Title
8:30 am	431	<a href="#">Telechelic bioactive poly(2-oxazoline)s with biofunctional and satellite end groups</a> Joerg C Tiller, Christoph P Fik, Arno M Bieser, Christian Waschinski
8:55 am	432	<a href="#">Polyoxazoline (POZ) for the drug delivery of biological molecules</a> Francesco Veronese, Anna Mero, Zhihao Fang, Tacey X Viegas
9:20 am	433	<a href="#">Poly(2-oxazoline)s as polymer therapeutics</a> Robert Luxenhofer, Anita Schulz, Tatiana K Bronich, Alexander V Kabanov, Rainer Jordan
9:45 am	434	WITHDRAWN
10:05 am		Intermission
10:25 am	435	<a href="#">Microwave-assisted syntheses and applications of poly(2-oxazoline)-derived contact biocides</a> Frank Wiesbrock, Andrew M. Kelly, Karl Rametsteiner, Verena Kaltenhauser, Franz Stelzer
10:50 am	436	<a href="#">Antifouling and antimicrobial surface coatings through Poly(2-methyl-2-oxazoline)</a> Canet Acikgoz, Mirren Charnley, Johan Ulrik Lind, Justyna Nowakowska, Nina Khanna, Regina Landmann, Marcus Textor
11:10 am	437	<a href="#">Surface tethered polysarcosine as a peptidomimetic antifouling polymer brush</a> K. H. Aaron Lau, Sung Hyun Park, Igal Szleifer, Phillip B Messersmith
11:30 am	438	<a href="#">Novel glycopeptoid polymer as antifouling mimic of glycocalyx</a> Hyun Ok Ham, Phillip B. Messersmith

**Oral Session PM**

Location: Manchester Grand Hyatt

Room: Mohsen A

Presiders: Neil Ayres, Ronald Zuckermann

Pres Time	Pub #	Presentation Title
1:30 pm	467	<a href="#">Enzymatic polymerization of poly-<math>\beta</math>-alanine: Establishing the reaction mechanism</a> <u>Katja Loos</u>
1:55 pm	468	<a href="#">Polymer synthesis using N-alkyl urea peptoid oligomers</a> <u>Neil Ayres</u> , Xiaoping Chen, Leanne Taylor
2:20 pm	469	<a href="#">Polypeptoids from N-substituted glycine N-carboxyanhydrides: Potential and limitations</a> Arlett Grossmann, Corinna Fetsch, <u>Robert Luxenhofer</u>
2:45 pm	470	<a href="#">Synthesis and properties of polypeptoid materials</a> <u>Donghui Zhang</u>
3:10 pm		Intermission
3:30 pm	471	<a href="#">Post-polymerization modification of polypeptides to create new functional materials</a> Jessica R Kramer, <u>Timothy J Deming</u>
3:55 pm	472	<a href="#">N-substituted glycine polypeptides (peptoids) as surface-grafted antifouling polymers</a> Phillip B Messersmith, K.H. Aaron Lau, Hyun O Ham, Chunlai Ren, <u>Sung H Park</u> , Igal Sleifer
4:20 pm	473	<a href="#">Protein mimetic nanostructures from sequence-specific peptoid polymers</a> <u>Ronald Zuckermann</u>
4:45 pm	474	<a href="#">Kinetic study of N-heterocyclic carbene-mediated zwitterionic polymerization of N-substituted N-carboxyanhydride</a> <u>Li Guo</u> , Donghui Zhang
5:05 pm	475	<a href="#">New class of polypeptoid-based PEO-mimetic polymers for solid polymer electrolytes</a> <u>Jing Sun</u> , Gregory M. Stone, Nitash P. Balsara, Ronald N. Zuckermann
5:25 pm		Concluding Remarks