

## Curriculum Vitae

Dr. Nermin Seda Kehr, geb. Ünalı  
Georgskommende 25, 48143 Münster  
Birthday: July 07<sup>th</sup>, 1977 in Ankara, Turkey  
Marital Status: Married  
Nationality: German  
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### Academic Career

- 2003 – 2005 *PhD Education:* Universität Münster, Germany, Organisch-Chemisches Institut; Supervisor: Prof. Dieter Hoppe  
“(–)-Sparteine-Induced Enantioselective Homoaldol Reactions and Their Applications”  
*Nomination: Doktor der Naturwissenschaft (magna cum laute)*
- July 14<sup>th</sup>, 2005
- 2002 – 2003 *Research Project:* Universität Münster, Germany, Organisch-Chemisches Institut; Supervisor: Prof. Rudolf Aumann  
“(C-C<sub>α</sub>)-Insertion: Insertion of an Alkyne into the C,C Single Bond Between the Carbene Carbon Atom and the α-Carbon Atom of a Fischer Carbene Complex Involving an Unprecedented Metalla(di-π-methane) Skeletal Re-arrangement”
- 1999 – 2001 *Master Education:* METU, Ankara, Turkey, Department of Chemistry, Institute of Natural and Applied Sciences, Organic Chemistry Department; Supervisor: Prof. Metin Balci  
“Synthesis of Benzobarrelene Derivatives and Their Di-π-Methane Rearrangements”  
*Master of Science in Chemistry (3.50 of 4.00)*
- July 10<sup>th</sup>, 2001
- 1994 – 1999 *Bachelor Education:* Middle East Technical University (METU), Ankara, Turkey, Department of Chemistry, Faculty of Arts & Sciences  
*Bachelor of Science in Chemistry (3.17 of 4.00)*
- June 27<sup>th</sup>, 1999

### Work Experiences

- Jun. 2011 – Sep. 2011 Visiting scientist at MIT (Department of Chemical Engineering, research group of Prof. Langer, Massachusetts Institute of Technology, USA)
- Since Jan. 2009 Assistant Professor (Habilitation) (Nanoscience, research group of Prof. De Cola, University of Münster, Germany)
- Jan. 2008 – Jan. 2009 Postdoctoral position (Nanoscience, research group of Prof. De Cola, University of Münster, Germany)
- Jan. 2007 – Jan. 2008 Postdoctoral position (Nanoscience, research group of Prof. Ravoo, University of Münster, Germany)
- Jan. 2007 – Aug. 2007 Postdoctoral position (Department of X-ray crystallography, University of Münster, Germany)
- Sept. 2006 – Jan. 2007 Postdoctoral position (Department of Mass spectrometry, University of Münster, Germany)
- July 3<sup>rd</sup>, 2006 “The European Language Certificate Communication & Competence, Zertifikat Deutsch” (grade: very good)
- Mar. 2006 – Jul. 2006 German language course: “Integrationskurs für Ausländer/innen und Aussiedler/innen”, Bildungsinstitut Münster (BIMS)
- Jan. 2006 – Sept. 2006 Jobsearcher
- 2003 – 2006 Wissenschaftliche Mitarbeiterin (University of Münster, Germany)
- 2002 – 2003 Wissenschaftliche Hilfskraft (University of Münster, Germany)
- 1999 – 2001 Research assistant (Department of Chemistry, Faculty of Arts & Sciences, METU, Ankara, Turkey)

Aug. 1998 – Sept. 1998	Summer intern, trainee course at the Turkish Standardization Institution, Ankara, Turkey
<b>Teaching</b>	
Since 2011	General Aspects of Nanoparticles (Responsible person, University of Münster, Germany)
Since 2010	Seminar Struktur der Materie (Assigned responsible person, University of Münster, Germany)
<b>Projects</b>	
Since 2011	“Synthesis of new nanocomposite hydrogels through host-guest interaction of nanoparticles with polymers” associated investigator, SFB 858 “Synergetic Effects in Chemistry - From Additivity towards Cooperativity” (Universität Münster, Germany, Organisch-Chemisches Institut)
<b>Scholarships, Awards</b>	
Nov. 2010 – Dec. 2010	Scholarship of “Master Class-Inspired by minds and nature“ Bundesministerium für Bildung und Forschung (Florianópolis, Santa Catarina, Brasilien)
Oct. 2001 – Apr. 2002	Scholarship of the graduate college “Highly Reactive Multiple Bonds” (Universität Münster, Germany)
2000 – 2001	Scholarship of TÜBİTAK (The Scientific and Technological Research Council of Turkey)
1994 – 1999	Five times: “High Honour Awards” for the best students of the semester
<b>Languages</b>	
	Turkish (native language) English (fluent in word and writing) German (fluent in word and writing) French (beginners)
<b>Invited Talks</b>	
Feb. 2012	Santa Barbara State University of California, USA: <i>“Functional periodic mesoporous organosilicas as biocompatible surfaces”</i>
Feb. 2012	University of Toronto, Canada: <i>“Periodic mesoporous organosilica based materials for biotechnological applications”</i>
May. 2010	University of Nagoya, Japan: <i>“Functionalization of Zeolite L Monolayers by Microcontact Chemistry and Their Application in Biotechnology”</i>
Feb. 2010	Santa Barbara State University of California, USA: <i>“Functionalization of Zeolite L Nanocrystals by Microcontact Printing and Interaction of Zeolite L Nanocrystals with Biological Systems”</i>
Jul. 2009	University of Münster, Germany: <i>“Interaction of Zeolite L Nanocrystals with Living Systems”</i>
Mar. 2009	Emory University, Atlanta, USA: <i>“Interaction of Zeolite L Nanocrystals with Living Systems”</i>
Mar. 2009	Santa Barbara State University of California, USA: <i>“Zeolite L Nanocrystals and Living Systems”</i>
Mar. 2008	Emory University, Atlanta, USA: <i>“Synthesis of Amphiphilic Cyclodextrins and Recognition of Guest Molecules in Water”</i>
Mar. 2008	University of Toronto, Canada: <i>“Formation of Bilayer Vesicles from Amphiphilic Cyclodextrins and Recognition of Guest Molecules in Water”</i>
Mar. 2008	Santa Barbara State University of California, USA: <i>“Host-Guest interaction of Amphiphilic Cyclodextrin Vesicles and Guest Molecules in Water”</i>

- Feb. 2007 University of Winsor, Ontario, Canada  
*"New Approach to Polymer Characterization by Electrospray-Mass Spectrometry"*
- Feb. 2007 Santa Barbara State University of California, USA:  
*"Polymer Characterization by Electrospray-Mass Spectrometry-Shifting the Upper Mass Limit"*
- Feb. 2005 Santa Barbara State University of California, USA:  
*"Synthesis of Nonracemic, Chiral Homoenate Reagents and Their Applications"*
- Jun. 2003 University of Münster, Germany:  
*"Insertion Reactions into Carbon – Carbon Single Bonds"*
- Sept. 2001 Istanbul Technical University, Turkey:  
*"Synthesis of Benzobarrelene Derivatives and Their Di- $\pi$ -Methane Rearrangements"*
- Sept. 2000 University of Dicle, Turkey:  
*"Di- $\pi$ -Methane Rearrangement of 2,3-2,5-2,6-Dicyano-benzobarrelene Systems: The Effect of the Polar Substituents on Regioselectivity and the new Explanation of the Di- $\pi$ -Methane Rearrangement Mechanism"*

## **Publications**

### **Contribution to books**

A. Devaux, F. Cucinotta, S. Kehr, L. De Cola, (2010): Functionalization and Assembling of Inorganic Nanocontainers for Optical and Biomedical Applications in Functional Supramolecular Architectures for Organic Electronics and Nanotechnology. Germany. Wiley VCH.

### **Articles in journals**

(22) K. Benson, Y. E. A. Prasetyanto, H.-J. Galla, N. S. Kehr\*, *"Bifunctional periodic mesoporous organosilicas and their self-assembled monolayers as biocompatible surfaces"* *Adv. Funct. Mater.*, **2012**, submitted.

(21) F. Versluis, J. Voskuhl, M.C.A Stuart, N. S. Kehr, B. J. Ravoo, A. Kros, *"Power Struggles between oligopeptides and Cyclodextrin Vesicles"* *Chem. Sci.*, **2012**, submitted.

(20) A. J. Ruiz-Sanchez, M. I. Montañez, C. Mayorga, M. J. Torres, N. S. Kehr, Y. Vida, D. Collado, F. Najera, L. De Cola, E. Perez-Inestrosa, *"Dendrimer-Modified Solid Supports: Nanostructured Materials with Potential Drug Allergy Diagnostic Applications"*, **2012**, in revision.

(19) J. El-Gindi, K. Benson, L. De Cola, H.-J. Galla, N. S. Kehr\*, *"Cell Adhesion Behaviour on Enantiomerically Functionalized Zeolite L Monolayers"* *Angew. Chem. Int. Ed.*, **2012**, DOI: 10.1002/anie.201109144.

(18) O. Z. Fisher, B. L. Larson, D. Graupner, M. T. Nguyen-Kim, N. S. Kehr, L. De Cola, R. Langer, D. G. Anderson, *"cMelanic Hydrogels Derived From Gallic Macromers"* *Adv. Mater.* **2011**, accepted.

(17) N. S. Kehr\*, J. El-Gindi, H. J. Galla, L. De Cola, *"Click Chemistry on Self-assembled Monolayer of Zeolite L Crystals by Microcontact Printing - Applications in Nanobiotechnology"* *Mic. Mes. Mater.*, **2011**, 144, 9-14.

(16) N. S. Kehr\*, K. Riehemann, J. El-Gindi, A. Schäfer, H. Fuchs, H. J. Galla, L. De Cola, *"Cell Adhesion and Cellular Patterning on a Self-Assembled Monolayer of Zeolite L Crystals"* *Adv. Funct. Mater.*, **2010**, 20, 2248-2254.

- (15) N. S. Kehr\*, A. Schäfer, B. J. Ravoo, L. De Cola, "Asymmetric printing of molecules and zeolites on self assembled monolayers" *Nanoscale*, **2010**, 2, 601–605.
- (14) F. Verluis, I. Tomatsu, S. Kehr, C. Fregonese, M. Stuart, B. J. Ravoo, R. Koning, A. Kros, "Shape and Release Control of a Peptide Decorated Vesicle through pH Sensitive Orthogonal Supramolecular Interactions" *J. Am. Chem. Soc.*, **2009**, 131, 13186–13187.
- (13) K. Nienkemper, G. Kehr, S. Kehr, R. Fröhlich, G. Erker, "(N-Arylaminoethyl)pyridine-N-oxides: Synthesis and characterization of potential ligand systems and the formation of their N,O-chelate aluminum complexes" *J. Organomet. Chem.*, **2008**, 18, 3063–3073.
- (12) K. Spanhoff, G. Kehr, S. Kehr, R. Fröhlich, G. Erker, "Functionalized phosphorus analogues of the  $\beta$ -diketiminato ligand systems: bis(N-arylphosphinimino)acetonitrile-derived complexes of rhodium and iridium" *Dalton Trans.*, **2008**, 25, 3339–3344.
- (11) K. Nienkemper, G. Kehr, S. Kehr, R. Fröhlich, G. Erker, "(Amidomethyl)pyridine zirconium and hafnium complexes: Synthesis and structural characterization" *J. Organomet. Chem.*, **2008**, 693, 1572–1589.
- (10) H. Lange, K. Bergander, R. Fröhlich, S. Kehr, S. Nakamura, N. Shibata, T. Toru, D. Hoppe, "Highly enantioselective reactions of configurationally labile epimeric diamine complexes of lithiated S-benzyl thiocarbamates" *Chem. Asian J.*, **2008**, 3, 88–101.
- (9) P. Spies, G. Kehr, S. Kehr, R. Fröhlich, G. Erker, "Formation and Structural and Dynamic Features of Atropisomeric  $\eta^2$ -Iminoacyl Zirconium Complexes" *Organometallics*, **2007**, 26, 5612–5620.
- (8) S. Kehr, H. Luftmann, "Polymer characterization by electrospray-mass-spectrometry - shifting the upper mass limit" *e-Polymers*, **2007**, 10.
- (7) S. Ünalı, R. Fröhlich, D. Hoppe, "Synthesis of enantio-enriched and diastereomerically pure cis-fused bicyclic  $\alpha$ -oxy-substituted  $\gamma$ -lactones via epoxidation of optically active homoaldol products" *Synthesis*, **2005**, 15, 2507–2520.
- (6) R. Kalkoven, S. Brandau, S. Ünalı, R. Fröhlich, D. Hoppe, "Enantio- and diastereoselective synthesis of highly substituted acylcyclopropanes from homoaldol products by stereospecific homoallylic cyclization" *Eur. J. Org. Chem.*, **2005**, 21, 4571–4580.
- (5) S. Ünalı, M. Özlügedik, R. Fröhlich, D. Hoppe, "Diastereoselective synthesis of enantioenriched, annulated tetrahydrofurans by simultaneous formation of the O-1-C-5 and the C-5-C-4 bonds" *Adv. Synth. Cat.*, **2005**, 347, 1621–1626.
- (4) M. Özlügedik, S. Ünalı, B. Wibbeling, D. Hoppe, "Synthesis of enantioenriched trans-fused bicyclo[4.4.0]-dec-3-enes and bicyclo[4.3.0]non-3-enes bearing a 1,5-lactone bridge" *Adv. Synth. Cat.*, **2005**, 347, 1627–1631.
- (3) S. Ünalı, R. Fröhlich, R. Aumann, "Organic synthesis via transition metal complexes, part 120. C-C insertion: Insertion of an alkyne into the C-C single bond between the carbene-carbon atom and the  $\alpha$ -carbon atom of a Fischer carbene complex by an unprecedented metalla(di- $\pi$ -methane) skeletal rearrangement" *Chem. Eur. J.*, **2003**, 9, 3000–3009.

(2) R. Altundas, A. Dastan, Arif; S. Ünalı, K. Guven, O. Uzun, M. Balci, "The di- $\pi$ -methane photorearrangement of 2,3-Disubstituted benzobarrelenes and benzonornadiene - substituent effects in regioselectivity" *Eur. J. Org. Chem.*, **2002**, 3, 526-533.

(1) S. Ünalı, M. Balci, "Substituent effect on regioselectivity in the di- $\pi$ -methane rearrangement: synthesis of disubstituted benzo-barrelene derivatives and their photochemistry" *Tetrahedron Lett.*, **2001**, 42, 8365-8367.

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