

## Curriculum Vitae

*Prof Dr. rer. nat. habil. Daniel Huster*  
Institute of Medical Physics and Biophysics  
University of Leipzig  
Härtelstr. 16-18  
04107 Leipzig

Bernhard-Göring-Str. 116  
04275 Leipzig

Tel: + 49 (0) 341-97-15701  
Fax: + 49 (0) 341-97-15709  
e-mail: daniel.huster@medizin.uni-leipzig.de

Priv.: + 49 (0) 341-303-7891

### **Birthdate:**

30 September 1969 in Zwickau, Saxony, Germany

### **Education:**

#### **Dr. rer. nat. habil, 16 March 2004**

University of Leipzig  
Thesis: "Solid-state NMR-investigations of the structure and dynamics of membrane bound and fibril forming proteins"

#### **Dr. rer. nat. (Ph. D.), 28 June 1999**

University of Leipzig  
Advisor: Prof. Dr. rer. nat. habil. K. Arnold  
Thesis: "NMR investigations of the interaction of biologically relevant polyelectrolytes with lipid surfaces and lipoproteins"  
Major: Physics Minor: Chemistry  
Grade: "summa cum laude" (1.0)

#### **Diplomphysiker (M. Sc.), 5 February 1996**

University of Leipzig  
Advisor: Prof. Dr. rer. nat. habil. K. Arnold  
Thesis: "NMR investigations of the water permeability of phospholipid bilayers"  
Major: Physics Minor: Philosophy  
Grade: "very good" (1.0)

#### **Abitur, 15 July 1989**

Betriebsberufsschule VEB MLK Werk Plauen, Plauen  
Grade: "with excellence" (1.1)

### **Scholarships:**

Studienstiftung des deutschen Volkes (German National Merit Foundation), 10/93-3/99  
BASF AG postdoctoral research fellowship, 12/99-11/01  
DAAD exchange Fellowship (Brazil), 7/2004 - 8/2004 and 5/2007 – 7/2007

### **Professional Societies:**

American Biophysical Society  
Deutsche Gesellschaft für Biophysik

### **Research experiences:**

Since 10/08 Professor for Medical Biophysics at the University of Leipzig  
5/07-7/07 Research stay at the Instituto de Física de São Carlos, Universidade São Paulo, Brazil  
1/06-09/08 Head of the junior research group “Structural Biology of Membrane Proteins”  
7/04-8/04 Research stay at the Instituto de Física de São Carlos, Universidade São Paulo, Brazil  
9/01-12/05 head of the junior research group “Solid-state NMR Studies of the Structure of Membrane-associated Proteins”  
12/99-8/01 Postdoc, Iowa State University, Ames, IA, USA  
7/99-11/99 Postdoc, University of Leipzig, Germany  
2/99 special volunteer, LMBB, NIAAA, NIH, USA  
5/98-10/98 special volunteer, LMBB, NIAAA, NIH, USA  
2/98-3/98 special volunteer, LMBB, NIAAA, NIH, USA  
8/96-3/97 special volunteer, LMBB, NIAAA, NIH, USA  
4/96-7/99 Ph. D. student, University of Leipzig, Germany  
3/95-10/95 special volunteer, LMBB, NIAAA, NIH, USA

**Research group leader:** Investigation of structure and dynamics of membrane associated lipid modified proteins and peptides such as the Ras protein and the Y1 receptor for neuropeptide Y and the Ras-protein. Development of solid-state NMR techniques to study structure and dynamics of membrane proteins. Investigation of the macromolecular dynamics in natural and tissue engineered cartilage and bone. Application of NMR techniques to study nanotechnological assemblies.

**Postdoc:** Iowa State University. Solid state NMR investigations on structure and dynamics of the channel binding domain of Colicin Ia in lipid bilayers. Development of solid-state NMR techniques to study structure and dynamics of membrane proteins.

**Ph.D. student:** University of Leipzig. Investigations on binding of biologically relevant polyelectrolytes to zwitterionic lipid surfaces via calcium and to cationic surface by various solid-state NMR methods.

**Special volunteer:** National Institutes of Health. Investigation of lateral lipid organization of phospholipid bilayers and membrane mixtures by solid state NMR. Elucidation of lipid-lipid cross-relaxation rates from <sup>1</sup>H MAS NOESY experiments as a tool to study lateral lipid organization. Application of these technique to lateral organization of complex mixtures.

**Diploma thesis:** University of Leipzig and National Institutes of Health. Measurement of water permeation across unsaturated phospholipid bilayers by  $^{17}\text{O}$  NMR.

**References:**

Dr. Klaus Gawrisch, Laboratory of Membrane Biochemistry and Biophysics, NIAAA, NIH, Rockville, MD, USA  
(301) 594-3750, gawrisch@helix.nih.gov

Dr. Klaus Arnold, Institute of Medical Physics and Biophysics, University of Leipzig, Leipzig, Germany  
+49 (0) 341 97-15701, arnold@server3.medizin.uni-leipzig.de

Dr. Mei Hong, Department of Chemistry, Iowa State University, Ames, USA  
(515) 294-3521, mhong@iastate.edu

**Reviewer of Scientific Publications/Grants:**

Reviewer for *Colloid and Polymer Science* (since 1999)  
*Biophysical Journal* (since 2001)  
*Bioorganic & Medicinal Chemistry* (since 2003)  
*Journal of Physical Chemistry* (since 2003)  
*Magnetic Resonance in Chemistry* (since 2003)  
*Biochemistry* (since 2003)  
*Journal of the American Chemical Society* (since 2003)  
*The Journal of Biological Physics* (since 2004)  
*The Journal of Colloid and Interface Science* (since 2004)  
*Magnetic Resonance in Medicine* (since 2005)  
*Nature* (since 2005)  
*Physical Review E* (since 2006)  
*European Biophysics Journal* (since 2006)  
*Acta Pharmacologica Sinica* (since 2006)  
*Science* (since 2007)  
*Chemistry of Materials* (since 2007)  
*Langmuir* (since 2007)  
*The Journal of Cell Biology* (since 2007)  
*Concepts in Magnetic Resonance* (since 2007)  
*Journal of Biological Chemistry* (since 2007)  
*ChemBioChem* (since 2008)  
*Angewandte Chemie International Edition* (since 2008)  
*International Journal of Biological Macromolecules* (since 2008)

Reviewer for *The Wellcome Trust* (since 2002)  
*Council for Chemical Sciences of the Netherlands Organization of Scientific Research* (since 2003)  
*The Israeli Science Foundation* (since 2006)

*The Finnish Academy of Science* (since 2007)  
*Deutsche Forschungsgemeinschaft* (since 2007)  
*Swiss National Fonds* (since 2007)

## **Publications:**

### *Journal articles*

1. Daniel Huster, Albert J. Jin, Klaus Arnold, and Klaus Gawrisch "Water permeability of polyunsaturated membranes measured by  $^{17}\text{O}$  NMR" *Biophys. J.* **73** (1997) 855-864
2. Daniel Huster, Klaus Arnold, and Klaus Gawrisch "Influence of docosahexaenoic acid and cholesterol on lateral lipid organization in phospholipid membranes" *Biochemistry* **37** (1998) 17299-17308
3. Daniel Huster and Klaus Arnold " $\text{Ca}^{2+}$ -mediated interaction between dextran sulfate and dimyristoyl-*sn*-glycero-3-phosphocholine surfaces studied by  $^2\text{H}$  NMR" *Biophys. J.* **75** (1998) 909-916
4. Daniel Huster, Klaus Arnold, and Klaus Gawrisch "Investigation of lipid organization in biological membranes by two-dimensional nuclear Overhauser enhancement spectroscopy" *J. Phys. Chem. B*, **103** (1999) 243-251
5. Albert J. Jin, Daniel Huster, Klaus Gawrisch, and Ralph Nossal "Light scattering characterization of extruded lipid vesicles" *Eur. Biophys. J.* **28** (1999) 187-199
6. Daniel Huster, Gerrit Paasche, Undine Dietrich, Olaf Zschörnig, Thomas Gutberlet, Klaus Gawrisch, and Klaus Arnold "Investigation of phospholipid area compression induced by calcium mediated dextran sulfate interaction" *Biophys. J.* **77** (1999), 879-887
7. Daniel Huster and Klaus Gawrisch "NOESY NMR crosspeaks between lipid headgroups and hydrocarbon chains – spin diffusion or molecular disorder?" *J. Am. Chem. Soc.* **121** (1999) 1992-1993
8. Klaus Dähnert and Daniel Huster "Comparison of the Poisson-Boltzmann model and the Donnan equilibrium of a polyelectrolyte in salt solution" *J. Colloid Interface Sci.* **215** (1999) 131-139
9. Scott E. Feller, Daniel Huster, and Klaus Gawrisch "Interpretation of NOESY cross-relaxation rates from MD simulation of a lipid bilayer" *J. Am. Chem. Soc.* **121** (1999) 8963-8964
10. Lama Naji, Jörn Kaufmann, Daniel Huster, Jürgen Schiller, Klaus Arnold " $^{13}\text{C}$  NMR relaxation study on cartilage and cartilage components. The origin of  $^{13}\text{C}$  NMR spectra of cartilage" *Carbohydr. Res.* **327** (2000) 439-446
11. Daniel Huster, Klaus Arnold, and Klaus Gawrisch "Strength of  $\text{Ca}^{2+}$  Binding to Retinal Lipid Membranes - Consequences for Lipid Organization" *Biophys. J.* **78** (2000) 3011-3018
12. Klaus Dähnert and Daniel Huster "Thermodynamics of the laminar Donnan system" *J. Colloid Interface Sci.* **228** (2000) 226-237

13. Daniel Huster, Undine Dietrich, Thomas Gutberlet, Klaus Gawrisch, and Klaus Arnold "Lipid matrix properties in cationic membranes interacting with anionic polyelectrolytes – a solid state NMR approach" *Langmuir* **16** (2000) 9225-9232
14. Daniel Huster, Satoru Yamaguchi, and Mei Hong "Efficient  $\beta$  Sheet Structure Determination in Proteins by Solid State NMR Spectroscopy" *J. Am. Chem. Soc.* **122** (2000) 11320-11327
15. Jürgen Schiller, Lama Naji, Daniel Huster, Jörn Kaufmann, and Klaus Arnold " $^1\text{H}$  and  $^{13}\text{C}$  HR-MAS NMR investigations on native and enzymatically digested bovine nasal cartilage" *MAGMA* **13** (2001) 19-27
16. Daniel Huster, Karsten Kuhn, Dieter Kadereit, Herbert Waldmann, and Klaus Arnold "High resolution magic angle spinning NMR for the investigation of a *ras* lipopeptide in a lipid membrane" *Angew. Chemie Int. Ed.* **40** (2001) 1056-1058; *Angew. Chemie* **113** (2001) 1083-1085
17. Daniel Huster, Peter Müller, Klaus Arnold, and Andreas Herrmann "Dynamics of membrane penetration of the fluorescent 7-nitrobenz-2-oxa-1,3-diazol-4-yl (NBD) group attached to an acyl chain of phosphatidylcholine" *Biophys. J.* **80** (2001) 822-831
18. Martin Rödenbeck, Matthias Müller, Daniel Huster, and Klaus Arnold "Counterion condensation as saturation effect under the influence of ion hydration" *Biophys. Chem.* **90** (2001) 255-268
19. Daniel Huster, Xiaolan Yao, Karen Jakes und Mei Hong; "Conformational changes of colicin Ia channel-forming domain upon membrane binding: a solid-state NMR study" *Biochim. Biophys. Acta* **1561** (2002) 159-170
20. Daniel Huster, Linshi Xiao, and Mei Hong, "Solid-state NMR investigation of the dynamics of soluble and membrane-bound colicin Ia channel-forming domain" *Biochemistry* **40** (2001) 7662-7674
21. Satoru Yamaguchi, Daniel Huster, Alan Waring, Robert I. Lehrer, William Kearney, Brian F. Tack, and Mei Hong, "Orientation and dynamics of an antimicrobial peptide in the lipid bilayer by solid-state NMR spectroscopy" *Biophys. J.* **81** (2001) 2203-2214
22. Daniel Huster, Xiaolan Yao, and Mei Hong, "Membrane protein topology probed by  $^1\text{H}$  spin diffusion from lipids using solid-state NMR spectroscopy" *J. Am. Chem. Soc.* **124** (2002) 874-883
23. Mei Hong, Xiaolan Yao, Karen Jakes, and Daniel Huster, "Investigation of molecular motions by magic-angle cross-polarization NMR spectroscopy" *J. Phys. Chem. B* **106** (2002) 7355-7364
24. Daniel Huster, Jürgen Schiller, and Klaus Arnold "Comparison of Collagen Dynamics in Cartilage and Isolated Fibrils by Solid State NMR Spectroscopy" *Magn. Reson. Med.* **48** (2002) 624-632

25. Daniel Huster, Peter Müller, Klaus Arnold, and Andreas Herrmann “The distribution of chain attached 7-nitrobenz-2oxa-1,3-diazol-4-yl (NBD) in acidic membranes determined by <sup>1</sup>H MAS NMR spectroscopy” *Eur. Biophys. J.* **32** (2003) 47-54
26. Alexander Vogel, Holger Scheidt, and Daniel Huster “The distribution of lipid attached EPR probes in bilayers. Application to membrane protein topology” *Biophys. J.* **85** (2003) 1691-1701
27. Daniel Huster, Alexander Vogel, Catherine Katzka, Holger A. Scheidt, Hans Binder, Olaf Zschörnig, Silvia Dante, Thomas Gutberlet, Herbert Waldmann, and Klaus Arnold “Membrane Insertion of a Lipidated ras peptide by FTIR, Solid-state NMR, and Neutron Diffraction Spectroscopy” *J. Am. Chem. Soc.* **125** (2003) 4070-4079
28. Holger A. Scheidt, Peter Müller, Andreas Herrmann, and Daniel Huster “The potential of fluorescent and spin labeled steroid analogs to mimic natural cholesterol” *J. Biol. Chem.* **278** (2003) 45563-45569
29. Patrick Barré, Satoru Yamaguchi, Hazime Saitô, and Daniel Huster “Backbone dynamics of bacteriorhodopsin as studied by <sup>13</sup>C solid-state NMR spectroscopy” *Eur. Biophys. J.* **32** (2003), 578-584
30. Patrick Barré, Olaf Zschörnig, Klaus Arnold, and Daniel Huster “Structural and Dynamical Changes of the Bindin B18 Peptide upon Binding to Lipid Membranes. A Solid-State NMR Study” *Biochemistry* **42** (2003) 8377-8386
31. Detlef Reichert, Ovidiu Pascui, Eduardo R. deAzevedo, Tito J. Bonagamba, Klaus Arnold, and Daniel Huster “A solid-state NMR study of the fast and slow dynamics of collagen fibrils at varying hydration levels” *Magn. Reson. Chem.* **42** (2004) 276-284
32. Holger A. Scheidt, André Pampel, Ludwig Nissler, Rolf Gebhard, and Daniel Huster. „Investigation of the membrane binding of flavonoids by high-resolution magic-angle spinning NMR spectroscopy” *Biochim. Biophys. Acta* **1663** (2004) 97-107
33. Daniel Huster, Lama Naji, Jürgen Schiller, and Klaus Arnold. “Dynamics of the biopolymers in articular cartilage studied by MAS NMR” *Appl. Magn. Reson.* **27** (2004) 471-487
34. Kerstin Wagner, A. G. Beck-Sickinger, and Daniel Huster “Structural investigations of a human calcitonin-derived carrier peptide in membrane environment by solid-state NMR”, *Biochemistry* **43** (2004) 12459-12468
35. Holger A. Scheidt, Wolfgang Flasche, Crina Cismas, Maximilian Rost, Andreas Herrmann, Jürgen Liebscher, and Daniel Huster “Design and Application of Lipophilic Nucleosides as Building Blocks to Obtain Highly Functional Biological Surfaces” *J. Phys. Chem. B* **108** (2004) 16279-16287
36. Daniel Huster, Holger A. Scheidt, Klaus Arnold, Andreas Herrmann and Peter Müller “Desmosterol may Replace Cholesterol in Biological Membranes” *Biophys. J.* **88** (2005) 1838-1844

37. Lars Thomas, Holger A. Scheidt, Andrea Bettio, Daniel Huster, Annette Beck-Sickinger, Klaus Arnold, and Olaf Zschörnig „Neuropeptide Y – membrane interaction detected by EPR and NMR spectroscopy” *Biochim. Biophys. Acta* **1714** (2005) 103-113
38. Daniel Huster “Investigations of the Structure and Dynamics of Membrane-associated Peptides by Magic Angle Spinning NMR” *Prog. Nucl. Magn. Reson. Spectrosc.* **46** (2005) 79-107
39. Holger A. Scheidt, Daniel Huster, and Klaus Gawrisch “Diffusion of Cholesterol and its Precursors in Lipid Membranes Studied by  $^1\text{H}$  PFG MAS NMR” *Biophys. J.* **89** (2005) 2504-2512
40. Alexander Vogel, Catherine Katzka, Herbert Waldmann, Klaus Arnold, Michael F. Brown, and Daniel Huster “Lipid modifications of a ras peptide exhibit altered p and mobility versus host membrane as detected by  $^2\text{H}$  solid-state NMR” *J. Am. Chem. Soc.* **127** (2005) 12263-12272
41. Toni Vagt, Olaf Zschörnig, Daniel Huster, and Beate Koksche „Membrane binding and structure of a cationic coiled coil peptide investigated by CD, fluorescence, and solid-state NMR spectroscopy”, *ChemPhysChem.* **7** (2006) 1361-1371
42. Göran Zernia and Daniel Huster „Collagen dynamics in articular cartilage under osmotic pressure“ *NMR Biomed.* **19** (2006) 1010-1019
43. Ronny Schulz, Stephanie Höhle, Göran Zernia, Matthias Zscharnack, Jürgen Schiller, Augustinus Bader, Klaus Arnold, and Daniel Huster “Analysis of extracellular matrix production in artificial cartilage constructs by histology, immunocytochemistry, mass spectrometry, and NMR spectroscopy” *J. Nanosci. Nanotech.* **6** (2006) 2368–2381
44. Anke Kurz, Andreas Bunge, Anne-Katrin Windeck, Maximilian Rost, Wolfgang Flasche, Anna Arbuzova, Denise Strobach, Sabine Müller, Jürgen Liebscher, Daniel Huster, Andreas Herrmann “Lipid-Anchored Oligonucleotides for Stable Double Helix Formation in Distinct Membrane Domains” *Angew. Chem. Int. Ed.* **45** (2006) 4440-4444
45. Guido Reuther, Kui-Thong Tan, Julia Köhler, Christine Nowak, André Pampel, Klaus Arnold, Jürgen Kuhlmann, Herbert Waldmann and Daniel Huster “Structural model of the membrane bound C-terminus of lipid modified human N-Ras protein” *Angew. Chem. Int. Ed.* **45** (2006) 5387-5390
46. Guido Reuther, Kui-Thong Tan, Alexander Vogel, Christine Nowak, Klaus Arnold, Jürgen Kuhlmann, Herbert Waldmann, and Daniel Huster “The lipidated membrane anchor of full length N-Ras protein shows an extensive dynamics as revealed by solid-state NMR spectroscopy” *J. Am. Chem. Soc.* **128** (2006) 13840-13846
47. Holger A. Scheidt, Alexander Vogel, Andreas Eckhoff, Bernd W. Koenig, and Daniel Huster „Solid-stateNMR characterization of the putative membrane anchor of TWD1 from *arabidopsis thaliana*“ *Eur. Biophys. J.* **36** (2007) 393-404

48. Andreas Bunge, Anke Kurz, Anne-Katrin Windeck, Maximilian Rost, Wolfgang Flasche, Jürgen Liebscher, Andreas Herrmann, Daniel Huster „Lipophilic oligonucleotides spontaneously insert into lipid membranes, bind complementary DNA strands, and translocate into lipid disordered domains“ *Langmuir* **23** (2007) 4455-4464
49. Frank Bringezu, Monika Majerowicz, Shaoying Wen, Guido Reuther, Kui-Thong Tan, Jürgen Kuhlmann, Herbert Waldmann, and Daniel Huster “Membrane Binding of a Lipidated N-Ras Protein Studied in Lipid Monolayers” *Eur. Biophys. J.* **36** (2007) 491-498
50. Jessica Schulz, Mathias Pretzsch, Ina Khalaf, Andrea Deiwick, Holger A. Scheidt, Georg von Salis-Soglio, Augustinus Bader, and Daniel Huster “Quantitative Monitoring of Extracellular Matrix Production in Bone Implants by <sup>13</sup>C and <sup>31</sup>P Solid-State NMR Spectroscopy” *Calcif. Tissue Int.* **80** (2007) 275-285
51. Jürgen Schiller, Matthias Müller, Beate Fuchs, Klaus Arnold, Daniel Huster „<sup>31</sup>P NMR Spectroscopy of Phospholipids. From Micelles to Membranes“ *Curr. Anal. Chem.* **3** (2007) 283-301
52. Alexander Vogel, Kui-Thong Tan, Herbert Waldmann, Scott E. Feller, Michael F. Brown, and Daniel Huster „Flexibility of Ras Lipid Modifications Studied by <sup>2</sup>H Solid-State NMR and Molecular Dynamics Simulations “ *Biophys. J.* **93** (2007) 2697-2712
53. Nicolai Brodersen, Jun Li, Oliver Kaczmarek, Andreas Bunge, Ludwig Löser, Daniel Huster, Andreas Herrmann, Jürgen Liebscher “Nucleosides with 5'-Fixed Lipid Groups – Synthesis and Anchoring in Lipid Membranes” *Eur. J. Org. Chem.* **36** (2007) 6060-6069
54. Alexander Vogel, Thomas Schröder, Christian Lange, and Daniel Huster Characterization of the Myristoyl Lipid Modification of Membrane Bound GCAP-2 by <sup>2</sup>H Solid-State NMR Spectroscopy *Biochim. Biophys. Acta* **1768** (2007) 3171-3181
55. Marcus Haberhauer, Göran Zernia, Ronny Schulz, Andrea Deiwick, Claudia Schnepf, Daniel Huster, and Augustinus Bader "Tissue engineered cartilage constructs grown in allogeneous plasma and whole blood nanoscaffolds" *Adv. Mater.* **20** (2008) 2061-2067
56. Andreas Bunge, Peter Müller, Martin Stöckl, Andreas Herrmann, and Daniel Huster "Characterization of the Ternary Mixture of Sphingomyelin, POPC, and Cholesterol. Support for an Inhomogeneous Lipid Distribution at High Temperature" *Biophys. J.*, **94** (2008) 2680-2690
57. Holger A. Scheidt and Daniel Huster “The Interaction of Small Molecules with Phospholipid Membranes studied by <sup>1</sup>H NOESY NMR under Magic-Angle Spinning” *Acta Pharmacol. Sin.* **29** (2008) 35-49
58. Astrid Vieler, Holger A. Scheidt, Peter Schmidt, Cindy Montag, Martin Lohr, Christian Wilhelm, Daniel Huster, Raimund Goss “The Influence of Phase Transitions in Phosphatidylethanolamine Models on the Activity of Violaxanthin De-Epoxidase” *Biochim. Biophys. Acta* **1778** (2008) 1027-1034

59. Daniel Huster "Solid-State NMR Studies of Collagen Structure and Dynamics in Isolated Fibrils and in Biological Tissues" *Ann. Rep. NMR Spectrosc.* **64** (2008) 127-159
60. Mirko Sackewitz, Holger A. Scheidt, Grit Lodderstedt, Elisabeth Schwarz, and Daniel Huster "Structure and Dynamics of Fibrils from a Disease-Associated Alanine Expansion Domain using Proteolysis and Solid-State NMR Spectroscopy" *J. Am. Chem. Soc.* **130** (2008) 7172-7173
61. Oliver Kaczmarek, Nicolai Brodersen, Andreas Bunge, Ludwig Löser, Daniel Huster, Andreas Herrmann, Jürgen Liebscher "Synthesis and membrane anchoring behaviour of nucleosides with 2'-fixed lipid anchors" *Eur. J. Org. Chem.* **37** (2008) 1917-1928
62. Gaetano Angelici, Giuseppe Falini, Hans-Jörg Hofmann, Daniel Huster, Magda Monari, Claudia Tomasini "A fiber-like peptide material stabilized by single intermolecular hydrogen bonds" *Angew. Chem. Int. Ed.* **47** (2008) 8075-8078
63. Luc Brunsveld, Herbert Waldmann, Daniel Huster "Membrane Binding of Lipidated Ras Peptides and Proteins – the Structural Point of View" *Biochim. Biophys. Acta* (2009) *in press*
64. Martin Löw, Jing Kang, Lars Dähne, Ruth Hendus-Altenburger, Oliver Kaczmarek, Jürgen Liebscher, Daniel Huster, Kai Ludwig, Christoph Böttcher, Andreas Herrmann, and Anna Arbuzova "Controlled assembly of vesicle-based nanocontainers on Layer-by-Layer particles via DNA hybridisation" *Small* (2009) *in press*
65. Andreas Bunge, Anne-Katrin Windeck, Thomas Pomorski, Andreas Herrmann, Daniel Huster, Peter Müller „Biophysical Characterization of a New Phospholipid Analogue with a Spin-labeled Unsaturated Fatty Acid Chain“ *Biophys. J.* (2009) *in press*
66. Anja Hagenau, Holger A. Scheidt, Sebastian Rammensee, Louise Serpell, Daniel Huster, and Thomas Scheibel "Structural Analysis of Proteinaceous Components in Mussel Byssal Threads of *Mytilus galloprovincialis*" *Chimia (Polymers in Life Sciences)*, (2009) *in press*
67. Lars Thomas, Holger A. Scheidt, Andrea Bettio, Annette G. Beck- Sickinger, Daniel Huster and Olaf Zschörnig "Membrane Interaction of NPY in the Presence of Negatively Charged and Zwitterionic Phospholipids" *Eur. Biophys. J.* (2009) *submitted*
68. Susann Schimmer, Diana Lindner, Peter Schmidt, Cindy Montag, Annette G. Beck- Sickinger, Daniel Huster, and Rainer Rudolph „Recombinant production, *in vitro* folding and functional characterization of the human Y<sub>1</sub> receptor“ *Biochemistry* (2009) *submitted*
69. Samiya Al-Robaiy, Jürgen Schiller, Daniel Huster, Reinhard Straubinger "Metamorphosis of *Borrelia burgdorferi* organisms - RNA, lipid and protein composition in context with the spirochetes' shapes" *J. Med. Microbiol.* (2009) *submitted*
70. Ariane Nimptsch, Stephanie Schibur, Matthias Schnabelrauch, Beate Fuchs, Daniel Huster, Jürgen Schiller "The simple and fast detection of picomole amounts of chondroitin sulphate by MALDI-TOF mass spectrometry subsequent to enzymatic digestion. The signal-to-noise

(S/N) ratio as concentration measure" *Anal. Chim. Acta* (2009) *submitted*

71. Holger A. Scheidt, Alvicler Magalhães, Stephanie Schibur, Eduardo R. de Azevedo, Tito J. Bonagamba, Ovidiu Pascui, Ronny Schulz, Detlef Reichert, and Daniel Huster. "The Mobility of Chondroitin Sulfate in Articular and Artificial Cartilage Measured by Magic-Angle Spinning NMR Spectroscopy" *Biomacromolecules* (2009) *submitted*
72. Alexander Vogel, Guido Reuther, Katrin Weise, Nagarajan Periasami, Kui-Thong Tan, Christine Nowak, Herbert Waldmann, Roland Winter, and Daniel Huster "The Lipid Modifications of the Ras Protein Adapt to the Thickness of the Surrounding Bilayer" *Proc. Natl. Acad. Sci. USA* (2009) *submitted*
73. Holger A. Scheidt and Daniel Huster "Structure and Dynamics of the Myristoyl Lipid Modification of a Src Peptide Determined by  $^2\text{H}$  Solid-State NMR Spectroscopy" *Biophys. J.* (2009) *submitted*

*Book chapters:*

68. Daniel Huster and Klaus Gawrisch "New insights into biomembrane structure from two-dimensional nuclear Overhauser enhancement spectroscopy" *in* "Lipid Bilayers Structure and Interactions" Editors: John Katsaras and Thomas Gutberlet, Springer Verlag, Berlin, 2000, 109-125
69. Jürgen Schiller, Beate Fuchs, Daniel Huster, Lama Naji, and Klaus Arnold „Structural properties of normal and diseased cartilage from the view of biophysical chemistry“ *in* "Recent research developments in Biochemistry" *Current Topics in Biochemical Research*, Vol. 5, Editor: Uma Ramchandran, Research Prints, Trivandrum, 2003, 43-63
70. Daniel Huster, Jürgen Schiller, and Klaus Arnold "Dynamics of collagen in articular cartilage studied by solid-state NMR methods" *in* *Methods in Molecular Medicine*, Vol. 100, Cartilage and Osteoarthritis, Volume 2, Structure and In Vivo Analysis, Editors: F. De Ceuninck, P. Pastoureau, M. Sabatini. Humana Press, 2004, 307-322
71. Jürgen Schiller, Daniel Huster, Beate Fuchs, Lama Naji, Jörn Kaufmann, and Klaus Arnold "Evaluation of cartilage composition and degradation by high resolution magic angle spinning nuclear magnetic resonance" *in* *Methods in Molecular Medicine*, Vol. 100, Cartilage and Osteoarthritis, Volume 2, Structure and In Vivo Analysis, Editors: F. De Ceuninck, P. Pastoureau, M. Sabatini. Humana Press, 2004, 269-287
72. Daniel Huster, Jürgen Schiller, Lama Naji, Jörn Kaufmann, Klaus Arnold "NMR studies of cartilage - Dynamics, diffusion and degradation" *in* "Molecules in interaction with surfaces and interfaces" Lecture Notes in Physics Editors: R. Haberland, A. Pöpl, R. Stannarius, and D. Michel. Springer Verlag, Heidelberg, 2004, 465-503
73. Jürgen Schiller, Beate Fuchs, Daniel Huster und Klaus Arnold „Untersuchungen von Knorpel mittels moderner NMR-Spektroskopie: Ein Beispiel für angewandte Physik in der Medizin“ *in* „Synergie, Syntropie, nichtlineare Systeme“ Editors: W. Eisenberg, U. Renner,

S. Trimper, M. Kunz, K. Vogelsang, Verlag im Wissenschaftszentrum Leipzig, 2006, *in press*

74. Göran Zernia and Daniel Huster „Investigation of Tissue Collagen Dynamics by Solid-state NMR Spectroscopy” *in* “Handbook of Modern Magnetic Resonance” Editor: G. Webb. Kluwer Academic Publisher, 2006 79-84

*Dissertations:*

73. Daniel Huster „NMR-Untersuchungen zur Wasserpermeation von Phospholipidbilayern“ Diploma Thesis, Universität Leipzig, 1996
74. Daniel Huster „NMR-Untersuchungen zur Wechselwirkung von biologisch relevanten Polyelektrolyten mit Lipidmembranen und Lipoproteinen“ Ph.D. Thesis, Universität Leipzig, 1999
75. Daniel Huster „Festkörper-NMR-Untersuchungen zur Struktur und Dynamik membran-gebundener und fibrillenbildender Proteine“ Habilitation, Universität Leipzig, 2004

*Selected Presentations:*

1. Daniel Huster and Klaus Gawrisch ”Influence of unsaturation and ethanol on water permeation across phospholipid bilayers measured by Nuclear Magnetic Resonance”, NIH Research Festival, Bethesda, Maryland, USA (1995)
2. Daniel Huster, Albert J. Jin, K. Gawrisch ”Water Permeability across unsaturated bilayers measured by  $^{17}\text{O}$  NMR”, 40<sup>th</sup> Annual Meeting of the American Biophysical Society, Baltimore, Maryland, USA *Biophys. J.* **70** (1996) A418
3. Daniel Huster, Albert J. Jin, K. Gawrisch ”Water Permeability across unsaturated bilayers measured by  $^{17}\text{O}$  NMR”, Triangle Biophysics Symposium on Molecular Dynamics of Biomembranes, Chapel Hill, North Carolina, USA (1996)
4. Daniel Huster, Judith Barry, and Klaus Gawrisch ”Lateral lipid organization in polyunsaturated membranes”, 41<sup>st</sup> Annual Meeting of the American Biophysical Society, New Orleans, Louisiana, USA *Biophys. J.* **72** (1997) A400
5. Daniel Huster, Olaf Zschörnig, and Klaus Arnold ” $\text{Ca}^{2+}$  mediated interactions of lipoproteins with components of the connective tissue -a solid state NMR study”, 1<sup>st</sup> Joint Meeting between the Italian and German Biophysical Societies, Hünfeld, Germany (1997)
6. Daniel Huster, Judith Barry, Klaus Arnold, and Klaus Gawrisch ”Influence of Docosahexaenoic Acid and Cholesterol on Lateral Lipid Organization in Phospholipid mixtures”, International Symposium on Lipids as Mediators and Regulators of Cell Function, Jena, Germany, (1997)

7. Daniel Huster, Olaf Zschörnig und Klaus Arnold "Wechselwirkung von Lipoprotein-phospholipiden mit makromolekularen Bindegewebsbestandteilen" Jahrestagung des Sonderforschungsbereiches 197, "Bio- und Modellmembranen", Erlbach (1997)
8. Daniel Huster and Klaus Arnold "Calcium mediated interaction of phospholipids and dextran sulphate investigated by  $^2\text{H}$  NMR", 42<sup>nd</sup> Annual Meeting of the American Biophysical Society, Kansas City, Missouri, USA *Biophys. J.* **74** (1998) A297
9. Daniel Huster, Klaus Arnold, and Klaus Gawrisch "NOESY NMR crosspeaks between lipids as a tool to study lateral lipid organization in membranes", 42<sup>nd</sup> Annual Meeting of the American Biophysical Society, Kansas City, Missouri, USA *Biophys. J.* **74** (1998) A203
10. Daniel Huster, Gerrit Paasche, Undine Dietrich, Olaf Zschörnig, Thomas Gutberlet, Klaus Gawrisch, and Klaus Arnold "Comparison of polyelektrolyte binding to charged and zwitterionic phospholipid surfaces", 43<sup>rd</sup> Meeting of the American Biophysical Society, Baltimore, Maryland, USA *Biophys. J.* **76** (1999) A61
11. Daniel Huster, Scott Feller, and Klaus Gawrisch "NOESY NMR crosspeaks between lipid headgroups and hydrocarbon chains - spin diffusion or molecular disorder?", 43<sup>rd</sup> Meeting of the American Biophysical Society, Baltimore, Maryland, USA *Biophys. J.* **76** (1999) A354
12. Daniel Huster "Struktur und Dynamik von Biomembranen: Neue Einblicke durch zwei-dimensionale NMR-Spektroskopie" Institut für Physikalische Biologie, Heinrich Heine Universität Düsseldorf
13. Daniel Huster, Gerrit Paasche, Undine Dietrich, Olaf Zschörnig, Thomas Gutberlet, Klaus Gawrisch, and Klaus Arnold "Comparison of Polyelectrolyte Binding to charged and zwitterionic Phospholipid Surfaces" German Biophysical Society Annual Meeting, (1999) Ulm, Germany
14. Daniel Huster, Scott Feller, Klaus Arnold, and Klaus Gawrisch "New Insights into Biomembrane Structure from two-dimensional Nuclear Overhauser Enhancement Spectroscopy" German Biophysical Society Annual Meeting, (1999) Ulm, Germany
15. Daniel Huster, Scott Feller, Klaus Gawrisch "Structure and Dynamics of Biomembranes – new Insights from two-dimensional Nuclear Overhauser Enhancement Spectroscopy" 44<sup>th</sup> Meeting of the American Biophysical Society, New Orleans, Louisiana, USA *Biophys. J.* **78** (2000) 482A
16. Daniel Huster "Colicin Ia membrane insertion studied by solid state NMR" Laboratory of Membrane Biochemistry and Biophysics, National Institute of Alcohol Abuse and Alcoholism, National Institutes of Health, Rockville, MD (USA) 2000
17. Daniel Huster, Peter Müller, Klaus Arnold, and Andreas Herrmann "Localization and dynamic reorientation of membrane penetration of the fluorescent NBD group attached to an acyl chain of phosphatidylcholine" 45<sup>th</sup> Meeting of the American Biophysical Society, Boston, Massachusetts, USA *Biophys. J.* **80** (2001) 2377

18. Daniel Huster, Dieter Kadereit, Karsten Kuhn, Herbert Waldmann, and Klaus Arnold "Investigation of a membrane bound ras peptide by  $^1\text{H}$  MAS NMR spectroscopy" 45<sup>th</sup> Meeting of the American Biophysical Society, Boston, Massachusetts, USA *Biophys. J.* **80** (2001) 2418
19. Daniel Huster, Xiaolan Yao, Linshi Xiao, Karen Jakes, and Mei Hong "Investigation of structure and dynamics of colicin Ia by solid-state NMR" 45<sup>th</sup> Meeting of the American Biophysical Society, Boston, Massachusetts, USA *Biophys. J.* **80** (2001) 217
20. Daniel Huster, Xiaolan Yao, Linshi Xiao, Karen Jakes, and Mei Hong "Solid-state NMR investigation of structural and dynamical changes of colicin Ia channel domain upon membrane binding" 42<sup>nd</sup> Experimental Nuclear Magnetic Resonance Conference, Orlando, Florida, USA, (2001)
21. Daniel Huster, Alexander Vogel, Hans Binder, Olaf Zschörnig, Thomas Gutberlet, Cathrine Katzka, Dieter Kadereit, Karsten Kuhn, Herbert Waldmann, and Klaus Arnold "Investigation of a membrane bound ras peptide by FTIR, neutron diffraction, and solid-state NMR spectroscopy" German Biophysical Society Annual Meeting, (2001) Münster, Germany
22. Daniel Huster "Solid-state NMR investigation of structural and dynamical changes of colicin Ia channel domain upon membrane binding" German Biophysical Society Annual Meeting, (2001) Münster, Germany
23. Daniel Huster "Investigation of the Structure and Dynamics of Membrane Proteins by Solid-State NMR Spectroscopy" (2001) Department of Physics, Martin Luther University Halle Wittenberg
24. Daniel Huster, Xiaolan Yao, and Mei Hong „Membrane protein topology probed by  $^1\text{H}$  spin diffusion from lipids – a solid state NMR study" 46<sup>th</sup> Meeting of the American Biophysical Society, San Francisco, California, USA *Biophys. J.* **82** (2002) 2600
25. Daniel Huster, Alexander Vogel, Hans Binder, Olaf Zschornig, Thomas Gutberlet, Catherine Katzka, Herbert Waldmann, Klaus Arnold "Membrane binding of a lipidated ras peptide studied by solid-state NMR, neutron diffraction, and FTIR spectroscopy" 46<sup>th</sup> Meeting of the American Biophysical Society, San Francisco, California, USA *Biophys. J.* **82** (2002) 2595
26. Daniel Huster „Solid-sate NMR investigations ofthe structural and dynamical changes of colicin Ia channel domain upon membrane binding" International workshop on lipid-peptide/lipid-protein interactions, (2002) Gomadingen, Germany
27. Daniel Huster "Untersuchung von Struktur und Dynamik von membrangebundenen ras-Peptiden mittels Festkörper-NMR, Neutronenstreuung und FTIR-Spektroskopie" (2002) Hahn-Meitner Institut, Berlin, Germany
28. Daniel Huster " $^1\text{H}$  MAS NMR investigation of membrane dynamics and the location of fluorescence and spin probes in multilamellar lipid bilayers" (2002) Institut de Biologie Physico-Chimique, Paris, France

29. Daniel Huster “Investigation of the Dynamics of Macromolecules in Articular Cartilage by Solid-State NMR Spectroscopy” (2002) Biological Solid-state NMR Meeting Oxford “Recent Innovations in Biological Solid State NMR”, Oxford, UK
30. Daniel Huster, Alexander Vogel, Thomas Gutberlet, Silvia Dante, Catherine Katzka, Herbert Waldmann, and Klaus Arnold “Membrane binding of a ras peptide by neutron diffraction and  $^2\text{H}$  solid-state NMR spectroscopy” German Biophysical Society Annual Meeting, (2002) Dresden, Germany
31. Daniel Huster “Structure and dynamics of biomembranes: New insights from two-dimensional NMR spectroscopy” Cell Systems Biology 2002, A European research training conference (2002), Berlin, Germany
32. Daniel Huster, Alexander Vogel, Catherine Katzka, Holger A. Scheidt, Silvia Dante, Thomas Gutberlet, Herbert Waldmann, and Klaus Artnold “Membrane Binding of a Lipidated Ras Peptide by Solid-state NMR and Neutron Diffraction” 47<sup>th</sup> Meeting of the American Biophysical Society, San Antonio, Texas, USA *Biophys. J.* **84** (2003) 1826
33. Holger A. Scheidt, Peter Müller, Andreas Herrmann, Daniel Huster “The potential of steroid analogs to mimic natural cholesterol” 47<sup>th</sup> Meeting of the American Biophysical Society, San Antonio, Texas, USA *Biophys. J.* **84** (2003) 1868
34. Daniel Huster “Membrane Binding of a Lipidated Ras Peptide by Solid-state NMR and Neutron Diffraction” (2003) 6<sup>th</sup> German Peptide Symposium, Berlin, Germany
35. Daniel Huster “Investigation of membrane binding ras peptides. A perspective for the study of larger membrane binding proteins” (2003) Max Planck Institute of Molecular Physiology, Dortmund, Germany
36. Daniel Huster „Struktur und Dynamikuntersuchungen von membranassoziierten Proteinen mittels Festkörper-NMR“ Mitteldeutsches Resonanztreffen (2003) Leipzig
37. Daniel Huster „Structural and Dynamical Changes of the Bindin B18 Peptide upon Binding to Lipid Membranes Revealed by Solid-State NMR” (2003) The 3<sup>rd</sup> Alpine Conference on Solid-State NMR, Chamonix-Mont Blanc, France
38. Detlef Reichert, Ovidiu Pascui, and Daniel Huster “Molecular Dynamics of Collagen: Site-specific Characterization and Influence of Hydration” (2003) The 3<sup>rd</sup> Alpine Conference on Solid-State NMR, Chamonix-Mont Blanc, France
39. Daniel Huster „Structure Determination of Membrane Proteins by Solid-State NMR” (2003) Biozentrum, Basel, Switzerland
40. Daniel Huster, Holger A. Scheidt, Peter Müller, and Andreas Herrmann “Potential of Steroid Analogs to Mimic Natural Cholesterol” (2003) European Life Science Organization, Dresden, Germany

41. Patrick Barré, Olaf Zschörnig, Klaus Arnold, and Daniel Huster “Structural and dynamical changes of the bindin B18 peptide upon binding to lipid membranes revealed by solid-state NMR” (2003) Annual Meeting on Magnetic Resonance, Leipzig, Germany
42. Daniel Huster, Patrick Barré, Kerstin Wagner, Annette G. Beck-Sickinger, Satoru Yamaguchi, and Hazime Saitô “Investigation of the structure and dynamics of membrane proteins by solid-state NMR” (2003) Annual Meeting on Magnetic Resonance, Leipzig, Germany
43. Holger A. Scheidt, Alexander Vogel, and Daniel Huster “A solid state NMR study of membrane protein topology using paramagnetic relaxation rates” (2003) Annual Meeting on Magnetic Resonance, Leipzig, Germany
44. Alexander Vogel, Catherine Katzka, Holger A. Scheidt, Herbert Waldmann, Klaus Arnold, and Daniel Huster „Membrane binding of a lipidated ras peptide studied by solid-state NMR“(2003) Annual Meeting on Magnetic Resonance, Leipzig, Germany
45. Kerstin Wagner, Annette G. Beck Sickinger, and Daniel Huster „Structural investigations of a human calcitonin-derived peptide in membrane environment: a solid-state NMR study“ (2003) Annual Meeting on Magnetic Resonance, Leipzig, Germany
46. Holger A. Scheidt, Alexander Vogel, and Daniel Huster “A solid state NMR study of membrane protein topology using paramagnetic relaxation rates” 48<sup>th</sup> Annual Meeting of the American Biophysical Society, Baltimore, Maryland, USA *Biophys. J.* **86** (2004) 560a
47. Kerstin Wagner, Annette G. Beck Sickinger, and Daniel Huster „Structural investigations of a human calcitonin-derived peptide in membrane environment: a solid-state NMR study“ 48<sup>th</sup> Annual Meeting of the American Biophysical Society, Baltimore, Maryland, USA *Biophys. J.* **86** (2004) 559a
48. Daniel Huster “Membrane binding, structure and dynamics of a lipidated ras peptide by solid-state NMR” (2004) International Workshop on cellular communication: Networks and molecular interactions, Gomadingen, Germany
49. Daniel Huster “Investigation of the dynamics of the macromolecules in articular cartilage and tissue engineered cartilage by NMR spectroscopy” (2004) 3<sup>rd</sup> Biotechnology Symposium, Leipzig, Germany
50. Daniel Huster “NMR investigations on articular and artificial cartilage” (2004) NMR-Symposium “Solid-state NMR in Biology”, Karlsruhe, Germany
51. Daniel Huster “NMR Investigations of the Macromolecular Mobility in Articular and Artificial Cartilage” (2004) Instituto de Física de São Carlos, Universidade de São Paulo, Brazil
52. Daniel Huster “Solid-state NMR Investigations of the Structure and Dynamics of Membrane-associated Peptides and Proteins” (2004) Instituto de Física de São Carlos, Universidade de São Paulo, Brazil

53. Göran Zernia, Stephanie Höhle, Ronny Schulz, Matthias Zscharnack, Augustinus Bader, Jürgen Schiller, Klaus Arnold, and Daniel Huster “Investigation of the Dynamics of the Macromolecules in Articular and Tissue Engineered Cartilage by NMR Spectroscopy” 49<sup>th</sup> Annual Meeting of the American Biophysical Society, Long Beach, California, USA *Biophys. J.* **88** (2005) 519 A
54. Scott Feller, Alexander Vogel, Herbert Waldmann, Klaus Arnold, Daniel Huster “Molecular dynamics simulations of a lipidated ras peptide in membranes” 49<sup>th</sup> Annual Meeting of the American Biophysical Society, Long Beach, California, USA *Biophys. J.* **88** (2005) 422A
55. Alexander Vogel, Catherine Katzka, Herbert Waldmann, Klaus Arnold, Michael F. Brown, and Daniel Huster “Lipid Modifications of a Ras Peptide Lead to Alteration of Bilayer Packing and Softness as Detected by <sup>2</sup>H Solid-State NMR” 49<sup>th</sup> Annual Meeting of the American Biophysical Society, Long Beach, California, USA *Biophys. J.* **88** (2005) 26A
56. Holger Scheidt Peter Müller, Andreas Herrmann, Klaus Arnold, and Daniel Huster “Comparing the biophysical properties of sterols in lipid membranes – what is special about cholesterol? 49<sup>th</sup> Annual Meeting of the American Biophysical Society, Long Beach, California, USA *Biophys. J.* **88** (2005) 240-241A
57. Daniel Huster “Structural investigation of a human calcitonin-derived carrier peptide in membrane environment by solid-state NMR” (2005) Workshop on Biophysics of Membrane-Permeabilising and Membrane-Penetrating Peptides, Berlin
58. Daniel Huster “Investigation of native and tissue engineered cartilage by <sup>13</sup>C NMR and mass spectrometry” 2<sup>nd</sup> World Congress on Regenerative Medicine (2005) Leipzig
59. Mathias Pretzsch, Jessica Schulz, Göran Zernia, Andrea Deiwick, Alexander Wild, Augustinus Bader, Klaus Arnold, and Daniel Huster “Solid-state NMR Spectroscopy on bone – Perspectives for the Regenerative Medicine” 2<sup>nd</sup> World Congress on Regenerative Medicine (2005) Leipzig
60. Daniel Huster “Investigation of Collagen, Native and Tissue Engineered Cartilage by <sup>13</sup>C Solid-state NMR” X Nuclear Magnetic Resonance Users Meeting, 2005, Angra dos Reis, Brazil
61. Alexander Vogel, Patrick Barré, Kerstin Wagner, Guido Reuther, Catherine Katzka, Annette G. Beck-Sickinger, Herbert Waldmann, and Daniel Huster “Investigation of Membrane-associated Peptides by Solid-state NMR” X Nuclear Magnetic Resonance Users Meeting, 2005, Angra dos Reis, Brazil
62. Daniel Huster “High field solid-state NMR studies on natural and tissue engineered cartilage and bone” Solid-state Nuclear magnetic resonance in material sciences – recent developments and perspectives. 2005, Leipzig, Germany

63. Daniel Huster “Solid-State NMR Studies of the Structure and Dynamics of Membrane Bound Ras Proteins” Minerva-Gentner Symposium, A Dive into Magnetic Resonance, 2005, Eilat, Israel
64. Daniel Huster “Solid-State NMR Studies of the Structure and Dynamics of Membrane Bound Ras Proteins” 2006, University of Dortmund, Germany
65. Daniel Huster “Solid-state NMR Characterization of the putative membrane anchor of TWD1 from *Arabidopsis Thaliana*” 50<sup>th</sup> Annual Meeting of the American Biophysical Society, Salt Lake City, Utah, USA *Biophys. J.* **90** (2006)
66. Daniel Huster “Solid-State NMR Studies of the Structure and Dynamics of Membrane Bound Ras Proteins” Laboratory of Membrane Biochemistry and Biophysics, National Institute of Alcohol Abuse and Alcoholism, National Institutes of Health, Rockville, MD (USA) 2006
67. Daniel Huster “Solid-State NMR Studies of the Structure and Dynamics of Membrane Bound Ras Proteins” Cornell University Medical School, New York City, NY (USA) 2006
68. Daniel Huster “Investigation of Native and Tissue Engineered Cartilage by <sup>13</sup>C Solid-State NMR” 47<sup>th</sup> Experimental Nuclear Magnetic Resonance Conference, Asilomar, California, USA, 2006
69. Daniel Huster “NMR Spectroscopy as an Analytical Tool for Tissue Engineering of Cartilage” Strategies in Tissue Engineering, Würzburg, *Cytotherapy* **8** (2006) 33
70. Daniel Huster „Structural Model of the Membrane Bound C-Terminus of Lipid-Modified Human N-Ras Protein Determined by Solid-State NMR Spectroscopy“ 1st International Workshop on Expression, Structure, and Function of Membrane Proteins, Firenze (Italy) 2006
71. Daniel Huster “Lipid Modifikation in Biologie und Biotechnologie” Mathematisch-Naturwissenschaftliche Fakultät I, Humboldt-Universität zu Berlin, Deutschland, 2006
72. Daniel Huster “Dynamics of the Lipidated Membrane Anchor of Full Length N-Ras Protein Studied by Solid-State NMR” International Conference on Magnetic Resonance in Biological Systems Göttingen, Germany, 2006
73. Daniel Huster, “Solid-state NMR studies on Membrane Proteins” 19<sup>th</sup> Faltertage, Halle, Deutschland, 2006
74. Daniel Huster “Solid-State NMR Studies of the Structure and Dynamics of Membrane Bound Ras Proteins” South East Magnetic Resonance Conference, Gainesville, FL (USA) 2006
75. Daniel Huster “Solid-State NMR Spectroscopy to Study the Structure and Dynamics of Membrane Bound Ras Proteins” Membrane Interacting Peptides and Proteins, International Bunsen Discussion Meeting, Halle, Germany, 2007

76. Daniel Huster “Solid-State NMR Studies of the Structure and Dynamics of Membrane Bound Ras Proteins” Wisconsin Medical College, Milwaukee, WI, USA, 2007
77. Daniel Huster “Investigation of Native and Tissue Engineered Cartilage and Bone by  $^{13}\text{C}$  Solid-State NMR”, Sigma-Aldrich Chemicals, Milwaukee, WI, USA, 2007
78. Daniel Huster “Structure and Dynamics of Membrane Proteins” NMR Applications to Material Science and Biomolecules, Pavia, Italy, 2007
79. Daniel Huster “Solid-State NMR Studies of the Structure and Dynamics of Membrane Bound Ras Proteins” 5<sup>th</sup> Alpine Conference on Solid-State NMR, Chamonix, France, 2007
80. Daniel Huster “Solid-State NMR Studies of the Structure and Dynamics of Membrane Bound Ras Proteins” ISMAR, Kenting, Taiwan, 2007
81. Daniel Huster “Solid-State NMR Spectroscopy - A new tool to characterize the Extrazellular Matrix of Native and Tissue Engineered Cartilage and Bone” Universität Köln, 2007
82. Daniel Huster “Investigation of Native and Tissue Engineered Cartilage and Bone by  $^{13}\text{C}$  Solid-State NMR” University of Cambridge, UK, 2008
83. Daniel Huster “Structure and Dynamics of the Acyl Chain of Lipid Modified Membrane Proteins Studied by  $^2\text{H}$  Solid-State NMR” 52<sup>th</sup> Annual Meeting of the American Biophysical Society, Long Beach, California, USA Biophys. J. **94** (2008)
84. Daniel Huster “Peptide Models in Structural Biology Insights from Solid-State NMR Spectroscopy” Workshop “Supramolecular chemistry and chemical biology of polypeptides: synergy towards bio-nanotechnology” Kiev, Ukraine, 2008
85. Daniel Huster “Methods to Study the Dynamics of Membrane-Associated Proteins by Solid-State NMR – the Example Ras” 8<sup>th</sup> CCPN Meeting “In silico, solids, and samples” Penrith, UK, 2008
86. Daniel Huster “ $^2\text{H}$  NMR Studies on the Structure and Dynamics of Lipid Modifications of Membrane-Associated Proteins” Jahrestreffen der Fachgruppe Magnetische Resonanz der Gesellschaft Deutscher Chemiker, Regensburg, 2008
87. Daniel Huster “Challenging Biological Systems – From Membrane Proteins to Biological Tissues” Challenging Biological Systems by NMR spectroscopy, Workshop, Berlin, 2008

### **PhD and MD Thesis**

1. Herr Dipl.-Phys. Holger A. Scheidt „NMR-Untersuchungen zur Membranstruktur und -dynamik in Gegenwart verschiedener membranassoziierter Moleküle“ Fakultät für Physik und Geowissenschaften, Dissertation, Universität Leipzig, 2005 (magna cum laude)

2. Herr Dipl.-Phys. Alexander Vogel „<sup>2</sup>H-NMR-Untersuchungen zur Struktur und Dynamik der membranbindenden Domäne des humanen N-Ras-Proteins“ Fakultät für Physik und Geowissenschaften, Dissertation, Universität Leipzig, 2006 (magna cum laude)
3. Herr Dipl. Phys. Andreas Bunge „Wechselwirkung von lipophilen Nukleosiden mit Lipidmembranen – Anwendungen zur Nanostrukturierung von Biooberflächen“ seit 9/04
4. Herr Dipl.-Phys. Guido Reuther „Festkörper-NMR-Untersuchungen zur Struktur und Dynamik des membrangebundenen Ras-Proteins“, Dissertation, Martin-Luther-Universität Halle-Wittenberg, 2009 (magna cum laude)
5. Frau cand. med. Stephanie Höhle „NMR-Untersuchung zur Beweglichkeit von Proteoglycanen in artikulärem und „*tissue engineered*“ Knorpelgewebe“ seit 3/2004
6. Herr cand. med. Göran Zernia „Charakterisierung der Dynamik von Kollagen in artikulärem und „*tissue engineered*“ Knorpelgewebe“ seit 3/2004
7. Frau cand. med. Ina Khalaf „Untersuchung der Kollagendynamik in Knochen und Knochenersatzmaterialien mittels Festkörper-NMR-Spektroskopie“ seit 1/2005
8. Herr Dipl.-Ing. Peter Schmidt „Expression und Faltung von G-Protein gekoppelten Rezeptoren“ seit 3/2006
9. Herr Dipl.-Ing. Christian Berger „Expression und strukturelle Charakterisierung des menschlichen G-protein gekoppelten CCK-Rezeptors“ seit 6/2006
10. Leif Zernia

### **Diploma Thesis**

1. Frau Dipl.-Biochem. Kerstin Wagner „Festkörper-NMR-Untersuchungen zur Wechselwirkung von Calcitonin mit Phospholipid Membranen“ Diplomarbeit, Universität Leipzig, 2003 (sehr gut)
2. Herr. Dipl.-Chem. “Wechselwirkung  $\alpha$ -helikaler coiled coil-Peptide mit künstlichen Membranen” Diplomarbeit, Universität Leipzig, 2004
3. Frau Dipl.-Biochem. Irina Hirsch „Rekonstitution von humanen Neuropeptid-Y-Rezeptoren (Typ II) in Liposomen“, Diplomarbeit, Martin-Luther-Universität Halle-Wittenberg, 2007
4. Frau Dipl.-Phys. Jessica Schulz „Investigation of slow and fast molecular motions of collagen in cartilage and bone using solid-state NMR spectroscopy“ Diplomarbeit, Universität Leipzig, 2006 (sehr gut)

5. Herr Dipl.-Biochem. Stephan Theisgen "NMR-Untersuchungen zur Wechselwirkung von GCAP-2 mit Phospholipidmembranen" Diplomarbeit, Martin-Luther-Universität Halle-Wittenberg, 2008
6. Sandra Bernd "Rekombinante Expression von Y2-Rezeptoren und Qualitätskontrolle mittels Lösungs-NMR-Spektroskopie"