

Project C5 'Bio-Assembly of Nanostructured Crystals'

C5.1 'Simulating Nanoscale Structure Formation' (W. Wenzel)

- [C5.1:1] * F. Hennrich, K. Arnold, S. Lebedkin, A. Quintillá, W. Wenzel, and M.M. Kappes, *Diameter sorting of carbon nanotubes by gradient centrifugation: role of endohedral water*, *phys. stat. sol. (b)* **244**, 3896 (2007)
- [C5.1:2] ‡ E.-J. Hong, K.-H. Lee, and W. Wenzel, *RMSD computation for clusters of identical particles*, *Int. J. Biol. and Biomed. Eng.* **1**, 50 (2007)
- [C5.1:3] * T. Schröder; A. Quintilla, J. Setzler, E. Birtalan, W. Wenzel, and S. Bräse, *Joint experimental and theoretical investigation of the propensity of peptoids as drug carriers*, *WSEAS Trans. Biol. Biomed.* **4**, 120 (2007)
- [C5.1:4] ‡ J.J. Kwiatkowski, J. Nelson, H. Li, J. L. Bredas, W. Wenzel, and C. Lennartz, *Simulating charge transport in tris(8-hydroxyquinoline) aluminium (Alq3)*, *Phys. Chem. Chem. Phys.* **10**, 1852 (2008)
- [C5.1:5] F.Q. Xie, R. Maul, S. Brendelberger, T. Schimmel, G. Schön, and W. Wenzel, *Preselectable integer quantum conductance of electrochemically fabricated silver point contacts*, *Appl. Phys. Lett.* **93**, 043103 (2008)
- [C5.1:6] ‡ E.B. Starikov, A. Quintilla, K.H. Lee, and W. Wenzel, *Conformational dependence of DNA ballistic conductivity*, *J. Chem. Phys (Communication)*, *J. Chem. Phys.* **129**, 5 (2008)
- [C5.1:7] ‡ W. Wenzel, J.J. Kwiatkowski, J. Nelson, H. Li, L. Bredas, and C. Lennartz, *Analysis of charge transport pathways in disordered organic conductors*; *Thin Solid Films* (in press) : also: talk at the SPIE Optoelectronics Conference, March 2008 Strasbourg and talk at European Materials Research Society Spring Meeting, Strasbourg, May 26-30, 2008
- [C5.1:8] * S. Behrens, W. Habicht, W. Wenzel, and K.J. Böhm, *Deposition of Palladium Nanoparticles on Self-Assembled, Zinc-Induced Tubulin Macrotubes and Sheets*, *J. Nanosci. Nanotechnol.* **9**, 6858 (2009)
- [C5.1:9] * F.-Q. Xi, R. Maul, A. Augenstein, Ch. Obermair, E.B. Starikov, W. Wenzel, G. Schön, and Th. Schimmel, *Independently switchable atomic transistors with predefined quantum conductance by reversible contact reconstruction*, *Nano Lett.* **8**, 4493 (2008)
- [C5.1:10] ‡ E.B. Starikov, A. Quintilla, C. Nganou, K. H. Lee, and W. Wenzel, *Single-molecule DNA conductance in water solutions: Role of DNA low-frequency dynamics*, *Chem. Phys. Lett.* **467**, 369 (2009)
- [C5.1:11] * R. Maul, J. Starikov, G. Schön, and W. Wenzel, *A recursive Greens'-Function Approach for Coherent Transport in Extended Metallic Junctions and Molecular Wires*, *Phys. Rev. B* **80**, 045424 (2009)
- [C5.1:12] * M. Meng, C. Ahlborn, M. Bauer, O. Plietzsch, S.A. Soomro, A. Singh, T. Muller, W. Wenzel, S. Bräse, and C. Richert, *Two Base Pair Duplexes Suffice to Build a Novel Material*, *ChemBioChem* **10**, 1335 (2009)
- [C5.1:13] ‡ S. Behrens, A. Heyman, R. Maul, S. Essig, S. Steigerwald, A. Quintilla, W. Wenzel, J. Bürck, O. Dgany, and O. Shoseyov, *Constrained Synthesis and Organization of Catalytically Active Metal Nanoparticles by Self-Assembled Protein Templates*, *Adv. Mater.* **21**, 3515 (2009) (Cover)
- [C5.1:14] * F.Q. Xie, R. Maul, Ch. Obermair, W. Wenzel, G. Schön, and Th. Schimmel, *Multi-Level Atomic-Scale Transistors based on Metallic Quantum Point Contacts*, *Adv. Mater.* **22**, 2033 (2010)

- [C5.1:15] C. Howell, R. Maul, W. Wenzel, and P. Koelsch, *Interactions of hydrophobic and hydrophilic self-assembled monolayers with water as probed by sum-frequency-generation spectroscopy*, Chem. Phys. Lett. **494**, 193 (2010)
- [C5.1:16] K.V. Klenin and W. Wenzel, *A method for the calculation of rate constants from stochastic transition paths*, J. Chem. Phys. **132**, 104104 (2010)
- [C5.1:17] * A. Quintilla, F. Henrich, S. Lebedkin, M.M. Kappes, and W. Wenzel, *Influence of endohedral water on diameter sorting of single-walled carbon nanotubes by density gradient centrifugation*, Phys. Chem. Chem. Phys. **12**, 902 (2010)
- [C5.1:18] * A. Singh, M. Tolev, M. Meng, K. Klenin, O. Plietzsch, C.I. Schilling, T. Muller, M. Nieger, S. Bräse, W. Wenzel, and C. Richert, *Branched DNA that Forms a Solid at 95 °C*, Angew. Chemie Int. Ed. **50**, 3227 (2010)
- [C5.1:19] * F.A. Lemasson, T. Strunk, P. Gerstel, F. Henrich, S. Lebedkin, C. Barner-Kowollik, W. Wenzel, M.M. Kappes, and M. Mayor, *Selective dispersion of single-walled carbon nanotubes with specific chiral indices by poly(N-decyl-2,7-carbazole)*, J. Am. Chem. Soc. **133**, 652 (2010)
- [C5.1:20] T. Strunk, K. Hamacher, F. Hoffgaard, H. Engelhardt, M. Zillig, K. Faist, W. Wenzel, and F. Pfeifer, *Structural Model of the Gas Vesicle Protein GvpA and Analysis of GvpA Mutants in vivo*, Mol. Microbiol. **81**, 56 (2011)

C5.2 'Synthesis of Functionalized Organic Nanostructures' (S. Bräse)

- [C5.2:1] C.I. Schilling and S. Bräse, *Stable organic azides based on rigid tetrahedral methane and adamantane structures as high energetic materials*, *Org. Biomol. Chem.* **5**, 3586 (2007)
- [C5.2:2] S. Bräse, A. Friedrich, M. Gartner, T. Grab, and T. Schröder, *Cycloaddition Reactions of Azides*, *Top. Heterocycl. Chem.* **12**, 45 (2008)
- [C5.2:3] * M. Meng, C. Ahlborn, M. Bauer, O. Plietzsch, S.A. Soomro, A. Singh, T. Muller, W. Wenzel, S. Bräse, and C. Richert, *Two Base Pair Duplexes Suffice to Build a Novel Material*, *ChemBioChem* **10**, 1335 (2009)
- [C5.2:4] * O. Plietzsch, C.I. Schilling, M. Tolev, M. Nieger, C. Richert, T. Muller, and S. Bräse, *Four-Fold Click Reactions: Generation of Tetrahedral Methane- and Adamantane-Based Building Blocks for Higher Molecular Assemblies*, *Org. Biomol. Chem.* **7**, 4734 (2009)
- [C5.2:5] O. Plietzsch, C.I. Schilling, M. Nieger, T. Muller, and S. Bräse, *Asymmetric synthesis of chiral tectons with tetrapodal symmetry: Fourfold asymmetric reactions*, *Tetrahedron: Asymmetry* **21**, 1474 (2010)
- [C5.2:6] ‡ W. Lu, D. Yuan, D. Zhao, C.I. Schilling, O. Plietzsch, T. Muller, S. Bräse, J. Guenther, J. Bluemel, R. Krishna, Z. Li, and H.-C. Zhou, *Porous Polymer Networks: Synthesis, Porosity, and Applications in Gas Storage/Separation*, *Chem. Mater.* **22**, 5964 (2010)
- [C5.2:7] C.I. Schilling, O. Plietzsch, M. Nieger, T. Muller, and S. Bräse, *Fourfold Suzuki-Miyaura and Sonogashira Cross-Coupling Reactions on Tetrahedral Methane and Adamantane Derivatives*, *Eur. J. Org. Chem.* 1743 (2011)
- [C5.2:8] * ‡ A. Singh, M. Tolev, M. Meng, K. Klenin, O. Plietzsch, C.I. Schilling, T. Muller, M. Nieger, S. Bräse, W. Wenzel, and C. Richert, *Branched DNA that Forms a Solid at 95 °C*, *Angew. Chem. Int. Ed.* **50**, 3227 (2011)
- [C5.2:9] * O. Plietzsch, C.I. Schilling, T. Grab, S.L. Grage, A.S. Ulrich, A. Comotti, P. Sozzani, T. Muller, and S. Bräse, *Click Chemistry Produces Hyper-Cross-linked Polymers with Tetrahedral Cores*, *New. J. Chem.* **35**, 1577 (2011)
- [C5.2:10] T. Muller and S. Bräse, *Click Chemistry finds its way into Covalent Porous Organic Materials*, *Angew. Chem. Int. Ed.* **50**, 11844 (2011); T. Muller and S. Bräse, *Klick-Chemie findet ihren Weg in kovalente Poröse organische Materialien*, *Angew. Chem.* **123**, 12046 (2011)

C5.3 'Bio-Assembly of Nanostructured Crystals' (C. Richert)

- [C5.3:1] * S.R. Vogel, K. Müller, U. Plutowski, M.M. Kappes, and C. Richert, *DNA-carbon nanotube interactions and nanostructuring based on DNA*, phys. stat. sol. (b) **244**, 4026 (2007)
- [C5.3:2] C. Richert, M. Meng, K. Müller, and K. Heimann, *The third dimension: DNA-driven formation of nanoparticle crystals*, Small **4**, 1040 (2008)
- [C5.3:3] * M. Meng, C. Ahlborn, M. Bauer, O. Plietzsch, S.A. Soomro, A. Singh, T. Muller, W. Wenzel, S. Bräse, and C. Richert, *Two base pair duplexes suffice to build a novel material*, ChemBioChem **10**, 1335 (2009)
- [C5.3:4] * O. Plietzsch, C.I. Schilling, M. Tolev, M. Nieger, C. Richert, Th. Muller, and S. Braese, *Four-fold Click reactions: Generation of tetrahedral methane- and adamantane-based building blocks for higher molecular assemblies*, Org. Biomol. Chem. **7**, 4734 (2009)
- [C5.3:5] C. Richert, M. Meng, and A. Singh, *Designed DNA Crystals: Triangles with Short Sticky Ends*, Small **5**, 2782 (2009)
- [C5.3:6] * A. Singh, M. Tolev, M. Meng, K. Klenin, O. Plietzsch, C.I. Schilling, T. Muller, M. Nieger, S. Bräse, W. Wenzel, and C. Richert, *Branched DNA that forms a solid at 95 °C*, Angew. Chem. Int. Ed. **50**, 3227 (2011)

C5.4 'Protein-Assisted Assembly of Superlattices' (H. Puchta)

- [C5.4:1] S. Blanck, D. Kobbe, F. Hartung, K. Fengler, M. Focke, and H. Puchta, *A SRS2 homolog from Arabidopsis thaliana disrupts recombinogenic DNA intermediates and facilitates single strand annealing*, *Nucleic Acids Res.* **37**, 7163 (2009)
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- [C5.4:3] A. Knoll and H. Puchta, *The role of DNA helicases and their interaction partners in genome stability and meiotic recombination in plants*, *J. Exp. Bot.* **62**, 1565 (2011)