
Curriculum Vitae

Personal Data

Name	Priv.-Doz. Dr. rer. nat. Christian Dietz
Date of Birth	July 25 th , 1981
Place of Birth	Mellrichstadt, GERMANY

Scientific Education / Positions

Since 07/2023	Group leader and supervisor of <i>Nanoanalytics Laboratory</i> , Physics of Surfaces, Technische Universität Darmstadt
12/2023 – 09/2024	Interim Professor of Materials Analysis Group, Technische Universität Darmstadt
11/2022	Habilitation in Materials Science, Technische Universität Darmstadt Title: <i>Nanomechanical properties of polymers and soft matter by advanced force microscopy: From quantification to subsurface imaging</i>
05/2011 – 06/2023	Supervisor <i>Nanoanalytics Laboratory</i> , Physics of Surfaces, Technische Universität Darmstadt, Group of Prof. Dr. Robert Stark
01/2009 – 04/2011	Postdoc Position, Instituto de Microelectrónica de Madrid (CSIC), Spain, Group of Prof. Dr. Ricardo Garcia
04/2005 – 11/2008	Completion of the PhD Thesis, Chemische Physik, Technische Universität Chemnitz, Group of Prof. Dr. Robert Magerle, Title: <i>Nanoscale Imaging of Mechanical Properties of Polymeric Materials Using Nanotomography and Scanning Force Microscopy Based Methods</i>
10/2004 – 03/2005	PhD Thesis, Lehrstuhl Physikalische Chemie II, Universität Bayreuth, Group of Dr. Robert Magerle / Prof. Dr. Krausch
10/1999 – 09/2004	Coburg University of Applied Sciences Subject Area: Technical Physics, Final Degree: Diplom-Ingenieur (FH) (Engineer), Diploma Topic: <i>Development and Optimization of Monocrystalline Actuators with Piezoelectric Excitation</i> at the Fraunhofer Institute (IPM) in Freiburg

Education

1997 – 1999	Staatl. Fachoberschule Bad Neustadt (Specialized secondary school)
1993 – 1997	Staatl. Realschule Mellrichstadt (Secondary school)
1987 – 1993	Grund- und Teilhauptschule Bastheim (Primary school)

Current Research Interests and Activities

- Multifrequency atomic force microscopy for the in-plane and out-of-plane nanomechanical characterization of graphitic surfaces
- Nanomechanics and -dynamics of healthy and cancerous human cells by force spectroscopy
- Nanoscale characterization of functional materials with advanced force microscopy methods
- Development of dynamic force microscopy methods for high-resolution imaging
- Quantification of mechanical properties of polymeric materials and biomaterials on the nanoscale
- Interfacial interactions on the nanoscale
- Micro- and nanoparticle manipulation: determination of interaction forces and dynamic behavior in the liquid environment
- Subsurface detection of magnetic nanoparticles in polymeric samples and biomaterial with magnetic force microscopy

Publications in Peer-Reviewed International Journals

1. R. Leiner, S. Witayakran, S. Verwaayen, L. Siegwardt, C. Ribeiro, C. Dietz, M. Koch, A. Kulachenko and M. Gallei
Tailored Interaction between Cellulose Nanowhiskers and Core-Shell Particles Determines the Optical and Mechanical Properties in Hybrid Films
ACS Applied Materials & Interfaces 16, 64377 (2024).
2. R. Leiner, L. Siegwardt, C. Ribeiro, J. Dörr, C. Dietz, R. W. Stark and M. Gallei
Structural Colors Derived from the Combination of Core-Shell Particles with Cellulose
Advanced Photonics Research 5, 2400091 (2024).
3. H. Zhang, A. Aubert, F. Maccari, C. Dietz, M. Yue, O. Gutfleisch and K. Skokov
Study of magnetization reversal and magnetic hardening in SmCo₅ single crystal magnets
Journal of Alloys and Compounds 993, 174570 (2024).
4. Q. Wu, M. Mellin, S. Lauterbach, C. Tian, C. Dietz, J. P. Hofmann and M. Einert
Soft-templated, mesoporous Co₃O₄ thin films for electrocatalysis of the oxygen evolution reaction
Materials Advances 5, 2098 (2024).
5. K. Walter, J. Bourquin, A. Amiri, N. Scheer, M. Dehnert, A. L. Eichhorn and C. Dietz*
Probing local lateral forces of focal adhesions and cell-cell junctions of living cells by torsional force spectroscopy
Soft Matter 19, 4772 (2023).
6. A. L. Eichhorn, M. Hoffer, K. Bitsch and C. Dietz*
Adsorbate Formation/Removal and Plasma-Induced Evolution of Defects in Graphitic Materials
Advanced Materials Interfaces 10, 2300256 (2023).
7. A. Amiri, C. Dietz, A. Rapp, M. C. Cardoso, and R. W. Stark
The cyto-linker and scaffolding protein "plectin" mis-localization leads to softening of cancer cells
Nanoscale 15, 15008 (2023).
8. F. Hartmann, M. Bitsch, B. J. Niebuur, M. Koch, T. Kraus, C. Dietz, R. W. Stark, C. R. Everett, P. Muller-Buschbaum, O. Janka, and M. Gallei
Self-Assembly of Polymer-Modified FePt Magnetic Nanoparticles and Block Copolymers
Materials 16, 5503 (2023).
9. L. Gemmer, J. B. Niebuur, C. Dietz, D. Rauber, M. Plank, F. Frieß, V. Presser, R. W. Stark, T. Kraus, and M. Gallei
Polyacrylonitrile-Containing Amphiphilic Block Copolymers: Self-Assembly and Porous Membrane Formation
Polymer Chemistry 14, 4825 (2023).
10. A. L. Eichhorn, M. Hoffer, and C. Dietz*
In-plane and out-of-plane interaction analysis of adsorbates on multilayer graphene and graphite by multifrequency atomic force microscopy
Carbon 200, 124 (2022).
11. A. L. Eichhorn and C. Dietz*
Torsional and lateral eigenmode oscillations for atomic resolution imaging of HOPG in air under ambient conditions
Scientific Reports 12, 8981 (2022).

12. F. Zhuo, U. R. Eckstein, N. H. Khansur, C. Dietz, D. Urushihara, T. Asaka, K. Kakimoto, K. G. Webber, X. Fang, and J. Rödel
Temperature-induced changes of the electrical and mechanical properties of aerosol-deposited BaTiO₃ thick films for energy storage applications
Journal of the American Ceramic Society 105, 4108 (2022).
13. M. Einert, M. Mellin, N. Bahadorani, C. Dietz, S. Lauterbach, J. Hofmann
Mesoporous High-Entropy Oxide Thin Films: Electrocatalytic Water Oxidation on High-Surface Area Spinel (Cr_{0.2}Mn_{0.2}Fe_{0.2}Co_{0.2}Ni_{0.2})₃O₄ Electrodes
ACS Applied Energy Materials 5, 717 (2022).
14. R. Poulain, J. Rohrer, Y. Hermans, C. Dietz, J. Brötz, J. Proost, M. Chatenet, and A. Klein
Origin of surface reduction upon water adsorption on oriented NiO thin films and its relation to electrochemical activity
The Journal of Physical Chemistry C 126, 1303 (2022).
15. A. L. Eichhorn and C. Dietz*
Simultaneous Deconvolution of In-Plane and Out-of-Plane Forces of HOPG at the Atomic Scale under Ambient Conditions by Multifrequency Atomic Force Microscopy
Advanced Materials Interfaces 8, 2101288 (2021).
16. L. Porz, T. Frömling, A. Nakamura, N. Li, R. Maruyama, K. Matsunaga, P. Gao, H. Simons, C. Dietz, M. Rohnke, J. Janek, and J. Rödel
Conceptual Framework for Dislocation-Modified Conductivity in Oxide Ceramics Deconvoluting Mesoscopic Structure, Core, and Space Charge Exemplified for SrTiO₃
ACS Nano 15, 9355 (2021).
17. K. Ding, E. Bruder, C. Dietz, K. Durst, X. Fang
Nanoindentation study of the oxide scale on FeCr alloy by high-pressure torsion
Corrosion Science 194, 109951 (2021).
18. Q. K. Muhammad, H. Bishara, L. Portz, C. Dietz, M. Ghidelli, G. Dehm, and T. Frömling
Dislocation-mediated electronic conductivity in rutile
Materials Today Nano 17, 100171 (2021).
19. X. Jiang, C. Dietz*, N. Liu, V. Rojas, and R. W. Stark
Ferroelectric Domain Evolution in a Ba(Zr_{0.2}Ti_{0.8})O₃-0.5(Ba_{0.7}Ca_{0.3})TiO₃ Piezoceramic Studied Using Piezoresponse Force Microscopy
Applied Physics Letters 118, 262902 (2021).
20. L. Zhang, Y. Pu, M. Chen, F. Zhuo, C. Dietz, and T. Frömling
Decreasing polar-structure size: Achieving superior energy storage properties and temperature stability in Na_{0.5}Bi_{0.5}TiO₃-based ceramics for low electric field and high-temperature applications
Journal of the European Ceramic Society 41, 5890 (2021).
21. M. W. Ott, C. Dietz, S. Trosien, S. Mehlhase, M. J. Bitsch, M. Nau, T. Meckel, A. Geissler, G. Siegert, J. Huong, B. Hertel, R. W. Stark, and M. Biesalski
Co-curing of epoxy resins with aminated lignins: insights into the role of lignin homo crosslinking during lignin amination on the elastic properties
Holzforschung 75, 390 (2020).
22. A. Amiri, F. Hastert, and C. Dietz*
Carcinomas with Occult Metastasis Potential: Diagnosis/Prognosis Accuracy Improvement by Means of Force Spectroscopy
Advanced Biosystems 4, 2000042 (2020).
23. A. Amiri, F. D. Hastert, L.-O. Heim, and C. Dietz*
Reliability of Cell Elasticity in Force Microscopy
Applied Physics Letter 116, 083701 (2020).

24. A. Amiri, F. Hastert, L. Stühn, and C. Dietz*
Structural Analysis of Healthy and Cancerous Epithelial Breast Type Cells by Nanomechanical Spectroscopy Allows to Obtain Peculiarities of Skeleton and Junctions
Nanoscale Advances 1, 4853 (2019).
25. L. Stühn, J. Auernhammer, and C. Dietz*
pH-depended protein shell dis- and reassembly of ferritin nanoparticles revealed by atomic force microscopy
Scientific Reports 9, 17755 (2019).
26. L. Stühn, A. Fritschen, J. Choy, M. Dehnert, and C. Dietz*
Nanomechanical sub-surface mapping of living biological cells by force microscopy
Nanoscale 11, 13089 (2019).
27. P. Ren, M. Höfling, S. Lauterbach, X. Jiang, J. Koruza, T. Frömling, D. Khatua, L. Porz, K. Albe, C. Dietz, R. Ranjan, H.-J. Kleebe, and J. Rödel
High Temperature Creep-Mediated Functionality in Polycrystalline Barium Titanate
Journal of the American Ceramic Society 103, 1891 (2019).
28. S. Schöttner, M. Brodrecht, E. Uhlein, C. Dietz, H. Breitzke, A. A. Tietze, G. Buntkowsky, and M. Gallei
Amine-Containing Block Copolymers for the Bottom-Up Preparation of Functional Porous Membranes
Macromolecules 52, 2631(2019).
29. R. Hatada, S. Flege, B. Rimmner, C. Dietz, W. Ensinger, and K. Baba
Surface Structuring of Diamond-like Carbon Films by Chemical Etching of Metallic Inclusions
Coatings 9, 125 (2019).
30. J. Kredel, C. Dietz, and M. Gallei
Fluoropolymer-Containing Opals and Inverse Opals by Melt-Shear Organization
Molecules 24, 333 (2019).
31. C. Dietz*
Sensing in-plane nanomechanical surface and sub-surface properties of polymers: local shear stress as function of the indentation depth
Nanoscale 10, 460 (2018).
32. P. Ruff, C. Dietz, R. W. Stark, and C. Hess
Monitoring the Process of Nanocavity Formation on a Monomolecular Level
Zeitschrift für Physikalische Chemie 232, 1227 (2018).
33. S. Flege, R. Hatada, A. Derepa, C. Dietz, W. Ensinger, and K. Baba
Note: Sample holder with open area for increased deposition rate in plasma immersion ion implantation and deposition
Review of Scientific Instruments 88, 096106 (2017).
34. L. M. Riemer, K. V. Lalitha, X. Jiang, N. Liu, C. Dietz, R. W. Stark, P. B. Groszewicz, G. Buntkowsky, J. Chen, S.-T. Zhang, J. Rödel, and J. Koruza
Stress-induced phase transition in lead-free relaxor ferroelectric composites
Acta Materialia 136, 271 (2017).
35. V. Rojas, J. Koruza, E. A. Patterson, M. Acosta, X. Jiang, N. Liu, C. Dietz, and J. Rödel
Influence of composition on the unipolar electric fatigue of $\text{Ba}(\text{Zr}_{0.2}\text{Ti}_{0.8})\text{O}_3$ - $(\text{Ba}_{0.7}\text{Ca}_{0.3})\text{TiO}_3$ lead-free piezoceramics
Journal of the American Ceramic Society 100, 4699 (2017).

36. N. Liu, M. Acosta, S. Wang, B.-X. Xu, R. W. Stark, and C. Dietz*
Revealing the core-shell interactions of a giant strain relaxor ferroelectric $0.75\text{Bi}_{1/2}\text{Na}_{1/2}\text{TiO}_3-0.25\text{SrTiO}_3$
Scientific Reports 6, 36910 (2016).
37. S. Schiwek, T. Meckel, R. W. Stark, and C. Dietz*
Evidence of a Rolling Motion of a Microparticle on a Silicon Wafer in a Liquid Environment
Journal of Applied Physics 119, 194304 (2016).
38. M. F. Bekheet, I. Svoboda, N. Liu, L. Bayarjargal, E. Irran, C. Dietz, R. W. Stark, R. Riedel, and A. Gurlo
Ferroelectric InMnO_3 : Growth of single crystals, structure and high-temperature phase transitions
Journal of Solid State Chemistry 241, 54 (2016).
39. C. Rüttiger, M. Appold, H. Didzoleit, A. Eils, C. Dietz, R. W. Stark, B. Stühn, and M. Gallei
Structure Formation of Metallopolymer-Grafted Block Copolymers
Macromolecules 49, 3415 (2016).
40. D. Scheid, D. Stock, T. Winter, T. Gutmann, C. Dietz, and M. Gallei
The Pivotal Step of Nanoparticle Functionalization for the Preparation of Functional and Magnetic Hybrid Opal Films
Journal of Materials Chemistry C 4, 2187 (2016).
41. C. Rüttiger, S. Mehlhase, S. Vowinkel, G. Cherkashinin, N. Liu, C. Dietz, R. W. Stark, M. Biesalski, and M. Gallei
Redox-Mediated Flux Control in Functional Paper
Polymer 98, 429 (2016).
42. S. Vowinkel, C. G. Schäfer, G. Cherkashinin, C. Fasel, F. Roth, N. Liu, C. Dietz, E. Ionescu, and M. Gallei
3D-Ordered Carbon Materials by Melt-Shear Organization for Tailor-Made Hybrid Core-Shell Polymer Particle Architectures
Journal of Materials Chemistry C 4, 3976 (2016).
43. N. Liu, R. Dittmer, R. W. Stark, and C. Dietz*
Visualization of Polar Nanoregions in Lead-Free Relaxors via Piezoresponse Force Microscopy in Torsional Dual AC Resonance Tracking Mode
Nanoscale 7, 11787 (2015).
44. S. Schiwek, L.-O. Heim, R. W. Stark, and C. Dietz*
Manipulation of Polystyrene Nanoparticles on a Silicon Wafer in the Peak Force Tapping Mode in Water: pH-Dependent Friction and Adhesion Force
Journal of Applied Physics 117, 104303 (2015).
45. C. Dietz*, M. Schulze, A. Voss, C. Riesch, and R. W. Stark
Bimodal Frequency-Modulated Atomic Force Microscopy with Small Cantilevers
Nanoscale 7, 1849 (2015).
46. A. Voss, C. Dietz*, A. Stocker, and R. W. Stark
Quantitative Measurement of the Mechanical Properties of Human Antibodies with Sub-10-nm Resolution in a Liquid Environment
Nano Research 8, 1987 (2015).
47. M. Acosta, N. Liu, M. Deluca, S. Heidt, I. Ringl, C. Dietz, R. W. Stark, and W. Jo
Tailoring Ergodicity Through Selective A-Site Doping in the $\text{Bi}_{1/2}\text{Na}_{1/2}\text{TiO}_3-\text{Bi}_{1/2}\text{K}_{1/2}\text{TiO}_3$ System
Journal of Applied Physics 117, 134106 (2015).

-
48. C. G. Schäfer, T. Winter, S. Heidt, C. Dietz, T. Ding, J. J. Baumberg, and M. Gallei
Smart Polymer Inverse-Opal Photonic Crystal Films by Melt-Shear Organization for Hybrid Core-Shell Architectures
Journal of Materials Chemistry C 3, 2204 (2015).
49. P. Hoffmann, M. Kosinova, S. Flege, J. Brötz, V. Trunova, C. Dietz, and W. Ensinger
Chemical and Physical Properties in Layers and Interfaces of Nanolayered Si(100)/Ni/BCxNy Stacks
X-Ray Spectrometry 44, 48 (2015).
50. A. Voss, R. W. Stark, and C. Dietz*
Surface versus Volume Properties on the Nanoscale: Elastomeric Polypropylene
Macromolecules 47, 5236 (2014).
51. J. Pinto, M. Dumon, M. Rodriguez-Perez, R. Garcia, and C. Dietz
Block Copolymers Self-Assembly Allows Obtaining Tunable Micro or Nanoporous Membranes or Depth Filters Based on PMMA; Fabrication Method and Nanostructures
The Journal of Physical Chemistry C 118, 4656 (2014).
52. R. Hatada, S. Flege, A. Bobrich, W. Ensinger, C. Dietz, K. Baba, T. Sawase, T. Watamoto, and T. Matsutani
Preparation of Ag-Containing Diamond-like Carbon Films on the Interior Surface of Tubes by a Combined Method of Plasma Source Ion Implantation and DC Sputtering
Applied Surface Science 310, 257 (2014).
53. F. Krohm, H. Didzoleit, M. Schulze, C. Dietz, R. W. Stark, C. Hess, B. Stühn, and A. Brunsen
Controlling Polymerization Initiator Concentration in Mesoporous Silica Thin Films
Langmuir 30, 369 (2014).
54. S. Hörner, S. Fabritz, H. D. Herce, O. Avrutina, C. Dietz, R. W. Stark, C. M. Cardoso, and H. Kolmar
Cube-Octameric Silsesquioxane-Mediated Cargo Peptide Delivery into Living Cancer Cells
Organic & Biomolecular Chemistry 11, 2258 (2013).
55. A. M. Gigler, C. Dietz,* M. Baumann, N. F. Martinez, R. García, and R. W. Stark
Repulsive Bimodal Atomic Force Microscopy on Polymers
Beilstein Journal of Nanotechnology 3, 456 (2012).
56. S. Fabritz, S. Hörner, D. Könnig, M. Empting, M. Reinwarth, C. Dietz, B. Glotzbach, H. Frauendorf, H. Kolmar, and O. Avrutina
From Pico to Nano: Biofunctionalization of Cube-Octameric Silsesquioxanes by Peptides and Miniproteins
Organic & Biomolecular Chemistry 10, 6287 (2012).
57. C. Dietz, E. T. Herruzo, J. R. Lozano, and R. Garcia
Nanomechanical Coupling Enables Detection and Imaging of 5 nm Superparamagnetic Particles in Liquid
Nanotechnology 22, 125708 (2011).
58. D. Martinez-Martin, E. T. Herruzo, C. Dietz, J. Gomez-Herrero, and R. Garcia
Non-Invasive Protein Structural Flexibility Mapping by Bimodal Dynamic Force Microscopy
Physical Review Letters 106, 198101 (2011).
59. C. Dietz,* M. Zerson, C. Riesch, M. Franke, and R. Magerle
Surface Properties of Elastomeric Polypropylene Studied with Atomic Force Microscopy
Macromolecules 41, 9259 (2008).
60. C. Dietz,* M. Zerson, C. Riesch, A. M. Gigler, R. W. Stark, N. Rehse, and R. Magerle
Nanotomography with Enhanced Resolution Using Bimodal Atomic Force Microscopy
Applied Physics Letters 92, 143107 (2008).
-

-
61. A. Yurtsever, A. M. Gigler, C. Dietz, and R. W. Stark
Frequency Modulated Torsional Resonance Mode Atomic Force Microscopy on Polymers
Applied Physics Letters 92, 143103 (2008).
 62. C. Dietz,* S. Röper, S. Scherdel, A. Bernstein, N. Rehse, and R. Magerle
Automatization of Nanotomography
Review of Scientific Instruments 78, 053703 (2007).
 63. R. García, C. J. Gómez, N. F. Martínez, S. Patil, C. Dietz, and R. Magerle
Identification of Nanoscale Dissipation Processes by Dynamic Atomic Force Microscopy
Physical Review Letters 97, 016103 (2006).

Third-Party Funds Raised

- DFG-Sachbeihilfe DI 2176/2-1 (**Project leader**, Project number 318205773): “*Subsurface imaging of magnetic nanoparticles and quantification of nanomechanical properties of polymeric and biological materials by bimodal atomic force microscopy*”.
2016 – 2020 **grand total: 214.100 €**
- DFG-Sachbeihilfe DI 2176/4-1 (**Project leader**, Project number 407750697): “*Investigation of the influence of defects on the nanomechanical properties of graphene by multifrequency atomic force microscopy*”.
2018 – 2022 **grand total: 221.300 €**
- DFG-Sachbeihilfe DI 2176/6-1 (**Project leader**):
“*Inter- and intramolecular nanomechanical interactions of homo- and heterogenous polymers*”.
Since October 2022 **grand total: 243.526 €**

Other Projects

- Industry-Project with Lam Research AG
“*Ensor-Project: Removal of polymer and silica micro- and nanoparticles from silicon wafers – Determination of the interfacial interactions and motion behavior*”
2011 - 2016

Awards

- Prize Winner: Young Investigator Award, *International Scanning Probe Microscopy Conference 2016*, Grindelwald, Switzerland.

Journal Referee

Nature Communications | Science Advances | ACS Nano | Small | npj Computational Materials
Nano Letters | Nanoscale | Macromolecules | ACS Biomaterials Science & Engineering
Biomacromolecules | Nanotechnology | Langmuir | Physical Chemistry Chemical Physics
Ultramicroscopy | The Journal of Physical Chemistry | RSC Advances | Polymer Bulletin
Analytical Methods | Journal of Applied Physics | Microscopy and Microanalysis

Referee for Third-Party Fund Proposals

- REinforcing Women In REsearch (REWIRE) Fellowship Programme of the University of Vienna, funded by the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 847693.
- DFG Sachbeihilfe

Oral Contributions at International Conferences

1. IX Multifrequency AFM Conference 2023.
Organized at Universidad Autonoma de Madrid, Madrid, Spain, June 2023.
In-plane and out-of-plane force deconvolution and interaction analysis of adsorbates of graphitic surfaces by multifrequency atomic force microscopy
2. VIII Multifrequency AFM Conference 2020 (online).
Organized at Universidad Autonoma de Madrid, Madrid, Spain, October 2020.
Nanomechanical sub-surface mapping of living biological cells by force microscopy for targeted drug delivery
3. AFM at KIT – Advances in Materials Characterization 2020.
Karlsruhe Institute of Technology, Karlsruhe, Germany, February 2020.
Nanomechanical sub-surface mapping of living cells and polymers by force microscopy
4. Cell Physics 2019.
Universität des Saarlandes, Saarbrücken, Germany, Oktober 2019.
Nanomechanical sub-surface mapping of living biological cells by force microscopy
5. AFM BioMed Conference.
Fürstbischöfliches Schloss, Münster, Germany, September 2019.
Nanomechanical sub-surface mapping of living biological cells by force microscopy
6. XXI Annual Linz Winter Workshop: Advances in Single-Molecule Research for Biology & Nanoscience.
Johannes Kepler Universität, Linz, Austria, February 2019.
Nanomechanical sub-surface mapping of cells by atomic force microscopy
7. VII Multifrequency AFM Conference.
Hotel Eurostars Madrid Tower, Madrid, Spain, April 2018.
Sensing in-plane nanomechanical surface and sub-surface properties of polymers: local shear stress as function of the indentation depth
8. Materials Science and Engineering Congress.
Technische Universität Darmstadt, Germany, September 2016.
Visualization of polar nanoregions in bismuth-alkali-based relaxor ferroelectrics revealed by high-resolution PFM and quantification of the relaxation behavior via high-speed PFM
9. International Scanning Probe Microscopy Conference.
Sunstar Hotel Grindelwald, Grindelwald, Switzerland, June 2016.
Visualization of polar nanoregions in bismuth-alkali-based relaxor ferroelectrics revealed by high-resolution PFM and quantification of the relaxation behavior via high-speed PFM
10. V Multifrequency AFM Conference.
Holiday Inn Hotel Bernabéu, Madrid, Spain, June 2014.
Surface and Volume Properties of Elastomeric Polypropylene Studied with Enhanced Atomic Force Microscopy Methods

-
11. MRS Spring Meeting & Exhibit 2013.
Moscone West, San Francisco, USA, April 2013.
Surface Properties of Elastomeric Polypropylene Studied with Enhanced Atomic Force Microscopy Methods
 12. IV Multifrequency AFM Conference.
Ayre Gran Hotel Colon, Madrid, Spain, October 2012.
Repulsive Bimodal Atomic Force Microscopy on Polymers
 13. IV International Meeting on AFM in Life Sciences and Medicine.
Institut Curie, Paris, France, August 2011.
Nanomechanical Coupling Enables Detection and Imaging of 5 nm Superparamagnetic Particles in Liquid
 14. III Multifrequency AFM Conference (local organizer).
Ayre Gran Hotel Colon, Madrid, Spain, March 2011.
Nanomechanical Coupling Enables Detection and Imaging of 5 nm Superparamagnetic Particles in Liquid
 15. II International Workshop on Advanced Atomic Force Microscopy.
Karlsruhe Institute of Technology, Karlsruhe, Germany, March 2011.
Nanomechanical Coupling Enables Detection and Imaging of 5 nm Superparamagnetic Particles in Liquid
 16. VIII Seeing at the Nanoscale International Conference.
Congress Center, Basel, Switzerland, August/September 2010.
High-Resolution Imaging of Ferritin by Bimodal Magnetic AFM in Liquid
 17. XII International Scanning Probe Microscopy Conference.
Keio Plaza Hotel, Sapporo, Japan, May 2010.
High-Resolution Imaging of Ferritin by Bimodal Magnetic AFM in Liquid
 18. XII Annual Linz Winter Workshop: Advances in Single-Molecule Research for Biology & Nanoscience.
Johannes Kepler Universität, Linz, Austria, February 2010.
High-Resolution Imaging of Ferritin by Bimodal Magnetic AFM in Liquid
 19. II Multifrequency AFM Conference (local organizer).
Holiday Inn Hotel, Madrid, Spain, June 2009.
Bimodal Atomic Force Microscopy of Magnetic Samples
 20. VI Seeing at the Nanoscale International Conference.
Maritim proArte Hotel, Berlin, Germany, July 2008.
Three-Dimensional Microstructure and Micromechanics of Elastomeric Polypropylene

Invited and Expert Talks

1. IX Multifrequency AFM Conference 2023 (Invited talk).
Organized at Universidad Autonoma de Madrid, Madrid, Spain, October 2023.
In-plane and out-of-plane force deconvolution and interaction analysis of adsorbates of graphitic surfaces by multifrequency atomic force microscopy
2. VIII Multifrequency AFM Conference 2020 (Invited talk).
Organized at Universidad Autonoma de Madrid, Madrid, Spain, October 2020.
Nanomechanical sub-surface mapping of living biological cells by force microscopy for targeted drug delivery
3. Advances in Material Characterization using Atomic Force Microscopy (Invited talk).
Karlsruhe Institut für Technologie, Karlsruhe, Germany, February 2020.
Nanomechanical sub-surface mapping of living cells and polymers by force microscopy
4. AFM Workshop Featuring Video-Rate AFM (Invited talk).
Institute of Physics, Technische Universität Chemnitz, Chemnitz, Germany, December 2017.
Nanoskalige Charakterisierung weicher Materie und funktionaler Materialien mittels höherer Schwingungsmoden des Rasterkraftmikroskops
5. VII Multifrequency AFM Conference (Expert talk).
Hotel Eurostars Madrid Tower, Madrid, Spain, April 2018.
Sensing in-plane nanomechanical surface and sub-surface properties of polymers: local shear stress as function of the indentation depth
6. V Multifrequency AFM Conference (Expert talk).
Holiday Inn Hotel Bernabéu, Madrid, Spain, June 2014.
Surface and Volume Properties of Elastomeric Polypropylene Studied with Enhanced Atomic Force Microscopy Methods

Teaching Activities

- **Lectures:** Weiche Materialien
Scanning Probe Microscopy in Materials Science (since 2013)
Solid State Physics / Concepts in Materials Physics (as substitute)
- **Exercises:** Weiche Materialien und Analytische Methoden
Solid State Physics (since 2011), Concepts in Materials Physics

Languages

German: native | **English:** fluent | **Spanish:** basic communication skills