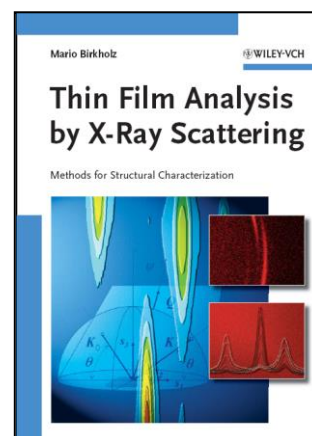


Publication List of Mario Birkholz

- I. Monographs
- II. Edited Books
- III. Refereed Contributions
- IV. Invited Talks
- V. Other Publications, Posters and Talks
- VI. Teaching

I. Monographs

2. *Atomic Puzzle – Growth-Structure-Property Relations in Thin Solid Films for Advanced Technological Applications*
M. Birkholz
Habilitation thesis, Frankfurt and Cottbus (2006) 154 pages
1. [Thin Film Analysis by X-Ray Scattering](#)
M. Birkholz
with contributions by P. Fewster and C. Genzel
Wiley-VCH, Weinberg (2005) 378 pages



II. Edited Books

2. [X-ray Techniques for Materials Research – from Laboratory Sources to Free Electron Lasers](#)
F. Boscherini, M. Birkholz, D. Chateigner, J.-Y. Buffiere, P. F. Fewster (Guest Editors)
Nuclear Instruments and Methods in Physics Research B **284** (2012)
1. [X-Ray Techniques for Advanced Materials, Nanostructures and Thin Films: From Laboratory Sources to Synchrotron Radiation](#)
F. Boscherini, M. Birkholz, D. Chateigner, J.-Y. Buffiere, P. F. Fewster, S. Heun (Guest Editors)
Nuclear Instruments and Methods in Physics Research B **268**, Issues 3-4 (2010)

III. Chapter in Edited Book

1. *Thin Films and Multilayers*
M. Birkholz
[International Tables for Crystallography, Volume H – Powder Diffraction](#)
C. Gilmore, J. Kaduk and H. Schenk (Eds.), Wiley-Blackwell, Chapter 5.4 (2019) 581-600

IV. Refereed Contributions

72. [*An Approach to Ring Resonator Biosensing Assisted by Dielectrophoresis: Design, Simulation and Fabrication*](#)
A. Henriksson, L. Kasper, M. Jäger, P. Neubauer, M. Birkholz
Micromachines **11** (2020) 954
71. [*Separation, characterization and handling of microalgae by dielectrophoresis*](#)
V. Abt, F. Gringel, A. Han, P. Neubauer, M. Birkholz
Microorganisms **8** (2020) 540
70. [*Spiral microfluidic devices for cell separation and sorting in bioprocesses*](#)
N. Herrmann, P. Neubauer, M. Birkholz
Biomicrofluidics **13** (2019) 061501
69. [*Comparison of time-gated surface-enhanced Raman spectroscopy \(TG-SERS\) and classical SERS based monitoring of Escherichia coli cultivation samples*](#)
M. Kögler, A. Paul, E. Anane, M. Birkholz,
A. Bunker, T. Viitala, M. Maiwald, S. Junne, P. Neubauer
Biotechnology Progress **34** (2018) 1533 - 1542
68. [*Prolonged corrosion stability of a microchip sensor implant during in vivo exposure*](#)
P. Glogener, M. Krause, J. Katzer, M.A. Schubert, M. Birkholz, O. Bellmann,
C. Kröger-Koch, H. M. Hammonn, C.C. Metges, C. Welsch, R. Ruff, K.P. Hoffmann
Biosensors **8**(1) (2018) 13
67. [*Micro-electromechanical affinity sensor for the monitoring of glucose in bioprocess media*](#)
L. Theuer, M. Lehmann, S. Junne, P. Neubauer, M. Birkholz
International Journal of Molecular Sciences **18**(6) (2017) 1235
66. [*Continuously operating biosensor and its integration into a hermetically sealed medical implant*](#)
M. Birkholz, P. Glogener, F. Glös, T. Basmer, L. Theuer
Micromachines **7**(10) (2016) 183
65. [*Technology modules from micro- and nanoelectronics for the life sciences*](#)
M. Birkholz, A. Mai, C. Wenger, C. Meliani, R. Scholz
WIREs Nanomedicine and Nanobiotechnology **8** (2016) 355 – 377
64. [*Depth-dependent evolution of texture and stress in thin film*](#)
M. Birkholz
Acta Crystallographica A **71** (2015) s159
63. [*System integration of a silicone-encapsulated glucose monitor implant*](#)
M. Birkholz, P. Glogener, T. Basmer, F. Glös, D. Genschow,
C. Welsch, R. Ruff, K. P. Hoffmann
Biomedical Technology **59**(s1) (2014) S1089 – S1092

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62. [Modeling the shape of ions in pyrite-type crystals](#)
M. Birkholz
Crystals **4** (2014) 390 – 403
 61. [Sensing glucose concentrations at GHz frequencies with a fully embedded Biomicro-electromechanical system \(BioMEMS\)](#)
M. Birkholz, K.-E. Ehwald, T. Basmer, P. Kulse, C. Reich, J. Drews, D. Genschow, U. Haak, S. Marschmeyer, E. Matthus, K. Schulz, D. Wolansky, W. Winkler, T. Guschanski, R. Ehwald
Journal of Applied Physics **113** (2013) 244904
 60. [Alignment of MG-63 Osteoblasts on Fibronectin-Coated Phosphorous Doping Lattices in Silicon](#)
A. Körtege, S. Stählke, R. Lange, M. Birkholz, M. Fraschke, K. Schulz, B. Nebe, P. Elter
World Academy of Science, Engineering and Technology **73** (2013) 801 – 804
 59. [Energy budget of an implantable glucose measuring system](#)
T. Basmer, D. Genschow, M. Fröhlich, M. Birkholz
Biomedical Technology **57** (2012) 259 – 262
 58. [Biostability of an implantable glucose sensor chip](#)
M. Fröhlich, M. Birkholz, K.-E. Ehwald, P. Kulse, O. Fursenko, J. Katzer
IOP Conference Series: Materials Science and Engineering **41** (2012) 012022
 57. [Fabrication of MEMS actuators from the BEOL of a 0.25 \$\mu\text{m}\$ BiCMOS technology platform](#)
P. Kulse, M. Birkholz, K.-E. Ehwald, J. Bauer, J. Drews, U. Haak, W. Höppner, J. Katzer, K. Schulz, D. Wolansky
Microelectronic Engineering **97** (2012) 276 – 279
 56. [Ultrathin TiN membranes as technology platform for CMOS-integrated MEMS and BioMEMS devices](#)
M. Birkholz, K.-E. Ehwald, P. Kulse, J. Drews, M. Fröhlich, U. Haak, M. Kaynak, E. Matthus, K. Schulz, D. Wolansky
Advanced Functional Materials **21** (2011) 1652 – 1656
 55. [Alignment Technology for Backside Integration](#)
J. Bauer, P. Kulse, U. Haak, M. Kaynak, K.-E. Ehwald, S. Marschmeyer, M. Birkholz, K. Schulz, G. Old, G. Scheuring, S. Döbereiner, F. Hillmann, H.-J. Brück
SPIE Proceedings **7985** (2011) 798508
 54. [Systemarchitektur intelligenter Sensorimplantate](#)
T. Basmer, P. Kulse, M. Birkholz
Biomedical Engineering / Zeitschrift für Biomedizinische Technik **55** (2010) P43
 53. [Separation of extremely miniaturized medical sensors by IR laser dicing](#)
M. Birkholz, K.-E. Ehwald, M. Kaynak, T. Semperowitsch, B. Holz, S. Nordhoff
Journal of Optoelectronic and Advanced Materials **3** (2010) 479 – 483

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52. [Corrosion-resistant metal layers from a CMOS process for bioelectronic applications](#)
M. Birkholz, K.-E. Ehwald, D. Wolansky, I. Costina,
C. Baristiran-Kaynak, M. Fröhlich, H. Beyer, A. Kapp, F. Lisdat
Surface and Coatings Technology **204** (2010) 2055 – 2059
 51. [A thin film approach to protein crystallography](#)
M. Birkholz
Nuclear Instruments and Methods in Physics Research B **268** (2010) 414 – 419
 50. [Profiling of Fiber Texture Gradients by Anomalous X-ray Diffraction](#)
M. Birkholz, N. Darowski, I. Zizak
Advances in Solid State Physics **48** (2009) 343 – 352
 49. [BEOL-Integrated RFMEMS Switch for mm-Wave Applications](#)
M. Kaynak, K.-E. Ehwald, J. Drews, R. F. Scholz, F. Korndörfer, D. Knoll,
B. Tillack, M. Birkholz, K. Schulz, Y. M. Sun, D. Wolansky, S. Leidich, S. Kurth
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 48. [Interatomic distances in pyrite-structure disulfides
– a case for ellipsoidal modeling of sulfur ions](#)
M. Birkholz, R. Rudert
physica status solidi (b) **245** (2008) 1858 – 1864
 47. [Profiling of Fiber Texture Gradients in Thin Films by Anomalous X-ray Diffraction](#)
M. Birkholz, N. Darowski, I. Zizak
Zeitschrift für Kristallographie **27** (2008) 263 – 271
 46. [Modelling of Diffraction from Fiber Texture Gradients in Thin Polycrystalline Films](#)
M. Birkholz
Journal of Applied Crystallography **40** (2007) 735-742
 45. [X-ray Characterization of Periodic Sub-nm Surface Relief Gratings](#)
P. Zaumseil, M. Birkholz, G. Weidner
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 44. [Small-Angle Reciprocal Space Mapping of Surface Relief Gratings](#)
M. Birkholz, P. Zaumseil, J. Bauer, D. Bolze, G. Weidner
Materials Science and Engineering C **27** (2007) 1154 – 1157
 43. [Structure of Biomembrane-on-Silicon Hybrids Derived from X-ray Reflectometry](#)
M. Birkholz, P. Zaumseil, M. Kittler, I. Wallat, M. Heyn
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 42. [Self-Organized Pattern Formation of Biomolecules at Silicon Interfaces](#)
M. Kittler, X. Yu, O. F. Vyvenko, M. Birkholz, W. Seifert,
M. Reiche, T. Wilhelm, T. Arguirov, A. Wolff, W. Fritsche, M. Seibt
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 41. [Preferred Orientation and Anisotropic Growth
in Polycrystalline ZnO:Al Films Prepared by Magnetron Sputtering](#)

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40. [*X-Ray Diffraction Study of Residual Stress and Preferred Orientation in Thin Titanium Films Subjected to a High Ion Flux During Deposition*](#)
M. Birkholz, C. Genzel, T. Jung
Journal of Applied Physics **96** (2004) 7202-7211
39. [*Metalloxid-Metall Nanokompositschichten für Verschleiß- und Korrosionsschutz*](#)
M. Birkholz, O. Bialas, T. Jung
Tribologie und Schmierungstechnik **51** (2004) 12-16
38. [*Nanocomposite layers of ceramic oxides and metals prepared by reactive gas-flow sputtering*](#)
M. Birkholz, U. Albers, T. Jung
Surface and Coatings Technology **179** (2004) 279-285
37. [*Structure-Function Relation between Preferred Orientation of Crystallites and Electrical Conductivity in Thin Polycrystalline ZnO:Al Films*](#)
M. Birkholz, B. Selle, F. Fenske, W. Fuhs
Physical Review B **68** (2003) 205414
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K. Ortner, M. Birkholz, T. Jung
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35. [*Highly \(100\)-Oriented Growth of Polycrystalline Silicon Films on Glass by Pulsed DC Magnetron Sputtering*](#)
P. Reinig, F. Fenske, W. Fuhs, V. Alex, M. Birkholz
Journal of Vacuum Science and Technology **A 20** (2002) 2004 - 2006
34. [*Ultrafast carrier trapping in microcrystalline Si observed in optical pump-THz probe measurements*](#)
P. Uhd Jepsen, W. Schairer, I. H. Libon, U. Lemmer, N. E. Hecker, M. Birkholz, K. Lips, M. Schall
Applied Physics Letters **79** (2001) 1291 – 1293
33. [*Amorphous-Crystalline Phase Transition During the Growth of Thin Films: The Case of Microcrystalline Silicon*](#)
M. Birkholz, B. Selle, W. Fuhs, S. Christiansen, H. P. Strunk, R. Reich
Physical Review B **64** (2001) 085402
32. [*Tailoring the Structure of Low-Temperature-Deposited Microcrystalline Silicon Films by Biasing the Substrate*](#)
M. Birkholz, B. Selle, W. Fuhs, D. L. Williamson
Materials Research Society Symposium Proceedings **664** (2001) 15.4
31. [*Crystallinity of Thin Silicon Films Deposited at Low Temperatures: Combined Effect of Biasing and Structuring the Substrate*](#)
M. Birkholz, E. Conrad, W. Fuhs

- Japanese Journal of Applied Physics **40** (2001) 4176 – 4180
30. [Characterization of Microcrystalline Si Films by MeV Ion Scattering Techniques](#)
W. Bohne, J. Röhrich, B. Selle, M. Birkholz, F. Fenske, W. Fuhs, J. Platen, P. Reinig
Materials Research Society Symposium Proceedings **638** (2001) 14.24
 29. *Absorber Layers for $n^+n^-p^+$ μ c-Si Solar Cells Grown by Electron-Cyclotron Resonance (ECR) CVD*
M. Birkholz, E. Conrad, L. Elstner, P. Müller
28th IEEE Photovoltaic Specialists Conference, Anchorage (2000) 904-907
 28. [Evolution of Structure in Thin Microcrystalline Silicon Films Grown by Electron Cyclotron Resonance \(ECR\) Chemical Vapor Deposition](#)
M. Birkholz, B. Selle, E. Conrad, K. Lips, W. Fuhs
Journal of Applied Physics **88** (2000) 4376 – 4379
 27. [Grain Size and Structure Analysis of Polycrystalline Silicon on Glass Formed by Aluminium-Induced Crystallisation for Thin-Film Solar Cell](#)
O. Nast, T. Puzzer, C. T. Chou, M. Birkholz
16th European Photovoltaic Solar Energy Conference, Glasgow, May 2000,
edited by H. Scheer et al., James & James, London, PA2.4
 26. [Microcrystalline Silicon Grown on Large Grained Polycrystalline Silicon Formed by Aluminium-Induced Crystallisation](#)
M. Birkholz, O. Nast, K. Kliefoth, E. Conrad, J. Rappich, P. Reinig, L. Elstner, W. Fuhs
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 25. [Solar-Cell-Suitable \$\mu\$ c-Si Films Grown by ECR CVD](#)
M. Birkholz, E. Conrad, K. Lips, B. Selle, I. Sieber, S. Christiansen, W. Fuhs
Materials Research Society Symposium Proceedings **609** (2000) 5.5
 24. [Electron Paramagnetic Resonance \(EPR\) and Light-Induced EPR Investigations of CuGaSe₂](#)
M. Birkholz, P. Kanschäat, T. Weiss, K. Lips
Thin Solid Films **361-362** (2000) 243 – 247
 23. *Amorphous Silicon Precipitates in (100) c-Si Films Grown by ECR-CVD*
M. Birkholz, J. Platen, I. Sieber, W. Bohne, J. Röhrich, W. Fuhs
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 22. [Low-Temperature Electron-Paramagnetic-Resonance Study of Extrinsic and Intrinsic Defects in CuGaSe₂](#)
M. Birkholz, P. Kanschäat, K. Lips, T. Weiss, M. Cervensky
Physical Review B **59** (1999) 12268 – 12271
 21. [Ag-doped CuGaSe₂ as a Precursor for Thin Film Solar Cells](#)
T. Weiss, M. Birkholz, M. Saad, S. Bleyhl, M. Kunst, A. Jäger-Waldau, M.C. Lux-Steiner
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20. [*Stoichiometry and Impurity Concentrations in II-VI Compounds Measured by Elastic Recoil Detection Analysis \(ERDA\)*](#)
M. Birkholz, W. Bohne, J. Röhrich, A. Jäger-Waldau, M. C. Lux-Steiner
Journal of Crystal Growth **197** (1999) 571 – 575
 19. *Single-phase CuGaSe₂ from high-temperature synthesis for a CVD-based thin film deposition technique*
N. Meyer, M. Birkholz, T. Weiss, A. Jäger-Waldau, M. Saad, S. Bleyhl, M. Kunst, M. C. Lux-Steiner
2nd World Conference on Photovoltaic Solar Energy Conversion, Vienna, July 1998
edited by J. Schmid et al., Arte Stampa, Daverio (Italy), 684 – 687
 18. *Vacancy-Type Defects in Iron-Pyrite FeS_{2-x}*
W. Puff, M. Birkholz, A. G. Balogh, S. Fiechter
Material Science Forum **255-257** (1997) 342 – 344
 17. [*Variations of Ionic Binding Energies and the Distribution of Charge Carriers in Orthorhombic La_{2-x}Sr_xCuO₄*](#)
M. Birkholz, R. Rudert
Zeitschrift für Physik B **99** (1996) 311 – 320
 16. [*Substitutional Disorder, Random Dipoles and Binding Energy of Orthorhombic La_{2-x}Sr_xCuO₄*](#)
M. Birkholz, R. Rudert
Zeitschrift für Physik B **98** (1995) 49 – 54
 15. [*Electrostatic Lattice Coefficients and Binding Energy of Orthorhombic La_{2-x}Sr_xCuO₄*](#)
M. Birkholz, R. Rudert
Zeitschrift für Physik B **97** (1995) 7 – 17
 14. [*Crystal-Field Induced Dipoles in Heteropolar Crystals II: Physical Significance*](#)
M. Birkholz
Zeitschrift für Physik B **96** (1995) 333 – 340
 13. [*Crystal-Field Induced Dipoles in Heteropolar Crystals I: Concept*](#)
M. Birkholz
Zeitschrift für Physik B **96** (1995) 325 – 332
 12. *The Microstructure and Stoichiometry of Pyrite FeS_{2-x}*
S. Fiechter, M. Birkholz, A. Hartmann, P. Dulski, M. Giersig, H. Tributsch, R. J. D. Tilley
Journal of Materials Research **7** (1992) 1829 – 1838
 11. [*Optical Absorption Coefficient of Pyrite \(FeS₂\)*](#)
M. Birkholz
11th EC Photovoltaic Solar Energy Conference, Montreux, October 1992
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 10. *Sputtering of Thin Pyrite Films*
M. Birkholz, D. Lichtenberger, C. Höpfner, S. Fiechter
Solar Energy Materials and Solar Cells **27** (1992) 243 – 251

9. [The Crystal Energy of Pyrite](#)
M. Birkholz
Journal of Physics: Condensed Matter **4** (1992) 6227 – 6240
8. *Defect Characteristics in Natural and Synthetic Pyrite Crystals*
W. Puff, A. G. Balogh, M. Birkholz, S. Fiechter,
Material Science Forum **105-110** (1991) 1177 – 1180
7. *Sulfur Deficiency in Iron Pyrite (FeS_{2-x}) and Its Consequences for Band Structure Models*
M. Birkholz, S. Fiechter, A. Hartmann, H. Tributsch
Physical Review B **43** (1991) 11926 – 11936
6. *Thin Film Preparation of FeS_2 (Pyrite)*
by Argon Sputtering, Plasma Reaction, MOCVD and Spray Pyrolysis
C. Höpfner, A. Ennaoui, D. Lichtenberger, M. Birkholz, G. Smestad,
S. Fiechter, H. Tributsch
10th EC Photovoltaic Solar Energy Conference, Lisbon, April 1991
edited by A. Luque et al., Kluwer, Dordrecht (1991) 594 – 597
5. *Defect Chemistry and Homogeneity Range of FeS_{2-x} (Pyrite)*
and their Influence on the Optoelectronic Behaviour
M. Birkholz, A. Hartmann, S. Fiechter, H. Tributsch
10th EC Photovoltaic Solar Energy Conference, Lisbon, April 1991
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4. *Phase Relation in the System In-CuInS₂*
M. L. Fearheiley, N. Dietz, M. Birkholz, C. Höpfner
Journal of Electronic Materials **20** (1991) 175 – 177
3. *Charge Carrier Kinetics in $MoSe_2$ and MoS_2 Powders*
K.-M. Schindler, M. Birkholz, M. Kunst
Chemical Physics Letters **173** (1990) 513 – 520
2. [Photoactive Thin Film Semiconducting Iron Pyrite](#)
[prepared by Sulfurisation of Iron Oxides](#)
G. Smestad, A. Ennaoui, S. Fiechter, H. Tributsch, W. Hofmann, M. Birkholz, W. Kautek
Solar Energy Materials **20** (1990) 149 – 165
1. [Formation of Semiconducting Iron Pyrite by Spray Pyrolysis](#)
G. Smestad, A. DaSilva, H. Tributsch, S. Fiechter, M. Kunst, N. Meziani, M. Birkholz
Solar Energy Materials **18** (1989) 299 – 313

IV. *Invited Talks (since 2008)*

- *Technology modules from microelectronics for the life sciences*
M. Birkholz
The University of Edinburgh, School of Engineering, 28th June 2017
- *Elektrizität und Leben – eine Partnerschaft mit Tradition und Zukunft*
M. Birkholz
Fakultät III der TU Berlin, 11. Mai 2016
- *BioMEMS for affinity viscosimetric detection of low-molecular weight analytes*
M. Birkholz
Physikalisch-Technische Bundesanstalt, Berlin, 8. Oktober 2015
- *Depth-dependent evolution of texture and stress in thin film*
M. Birkholz
29th European Crystallographic Meeting, Rovinj, 23rd - 28th August 2015
- *Technologiemodule der Mikroelektronik für die Lebenswissenschaften*
M. Birkholz
Workshop PAT/Bioelektronik, Ludwig-Erhard Haus, Berlin, 7. Mai 2015
- *BioMEMS for affinity viscosimetric detection of low-molecular weight analytes*
M. Birkholz
Bioelektronik-Symposium, INB/FH Aachen, 23.-24. März 2015
- *What means and to which end do we study bioelectronics?*
M. Birkholz
RTG-Workshop „Bioelectronic inside“, Radebeul bei Dresden, 26. November 2014
- *Joint Lab Bioelectronics –
das gemeinsame Labor für Bioelektronik von TU Berlin und IHP*
M. Birkholz
8. Mitteldeutscher Technologietag, Dresden, 25. November 2014
- *Interdisziplinäre Perspektive:
TUB und IHP gründen das gemeinsame Labor für Bioelektronik*
M. Birkholz
BioBilanz, Landesvertretung Brandenburg beim Bund, Berlin, 27. November 2013
- *BioMEMS zum affinitätsviskosimetrischen Nachweis niedermolekularer Analyte*
M. Birkholz
Seminar des Peter-Grünberg-Instituts, FA Jülich, 4. November 2013
- *Mikroelektronik für die Biotechnologie*
M. Birkholz
Universität Rostock, Forschungskolloquium, 18. Juni 2013
- *Die Bio-Halbleiter-Grenzfläche – Kommunikationsbarriere oder Kommunikationskanal?*
M. Birkholz

Kolloquium “Prozesse an Grenzflächen”, BTU Cottbus, 25. Oktober 2011

- *Bioelectronics – Merger of Microelectronics and Biotech at the Nanoscale*
M. Birkholz
German-Turkish Workshop for NanoBio- and Biosensing Technologies
Ankara, Turkey, June, 21, 2011
- *Patientenfreundliche Biosensoren dank Mikroelektronik*
M. Birkholz
Point-of-Care Testing Workshop, Asklepios-Klinikum Birkenwerder, 22. Februar 2011
- *Mikroelektronisch voll-integrierte Biosensoren –
und was die Werkstofftechnik im Kleinen dazu beitragen kann*
M. Birkholz
Bundesanstalt für Materialprüfung, Abteilung V, Berlin, 29. Oktober 2010
- *Corrosion-resistant metal electrodes from a CMOS process for bioelectronic applications*
M. Birkholz, K.-E. Ehwald, D. Wolansky, I. Costina,
C. Baristiran-Kaynak, M. Fröhlich, H. Beyer, A. Kapp, F. Lisdat
Asia-Pacific Interfinish 2010, Singapore, 20.-22.10.2010
- *Nanoelektromechanischer Glucosesensor –
eine Entwicklung zwischen Mikroelektronik und Biotechnologie*
M. Birkholz
Brandenburgisch-Technische Universität Cottbus, Fakultät I, 19. Januar 2010
- *Minimal-invasiver Glucosesensor – eine Entwicklung aus Berlin-Brandenburg*
M. Birkholz (für das MIBS-Konsortium)
1. Berlin-Brandenburger Technologieforum in-vitro Diagnostik und Bioanalytik,
Potsdam Golm, 19. Mai 2009
- *Perspektiven der Biomolekülsensorik zwischen Mikroelektronik und Biotechnologie*
M. Birkholz
7th Leibniz Conference – Sensorsysteme 2008, Lichtenwalde, 16.-18. Oktober 2008
- *Der Werkzeugkasten der Mikroelektronik für die medizinische Diagnostik*
M. Birkholz
Diagnostik-Netzwerk Berlin-Brandenburg, Berlin, 8. Juli 2008
- *Halbleitermaterialien für die Biotechnologie*
M. Birkholz
Institutskolloquium des Instituts für Kristallzüchtung, Berlin, 13. Juni 2008
- *Mikroelektronik für Medizin und Biotechnologie*
M. Birkholz
Schüler-Campus Brandenburg, Universität Potsdam, 13. März 2008
- *Profiling of fiber texture gradients by anomalous x-ray diffraction*
M. Birkholz, N. Darowski, I. Zizak
DPG-Frühjahrstagung, AK Festkörperphysik, Berlin 28. Februar 2008

V. Other Publications, Posters and Talks (since 2009)

- *Separation of Microalgae and Polystyrene particles by Dielectrophoresis*
D. Malti, A. Barai, M.E.P. Emmerich, L.I.M. Hinze, P. Neubauer, M. Birkholz
BioProScale Symposium 2021 Online, Berlin, March 2021 (Oral presentation)
- *Design, Simulations and Manufacturing of a Microring Resonator Biosensor Assisted by Dielectrophoresis*
A. Henriksson, M. Jäger, L. Kasper, P. Neubauer, M. Birkholz
European Biosensor Symposium 2021 Online, UAS Wildau, March 2021 (Poster)
- *Dielektrophorese-basiertes Lab-on-Chip System zur Separation von Mikroalgen*
A. Barai, J. Flügge, A. Hutari, P. Neubauer, M. Birkholz
Mikrosystemtechnik Kongreß, Berlin, Oktober 2019 (Poster)
- *Microalgae cell separation and concentration in a microfluidic channel under dielectrophoresis (DEP) effect*
A. Barai, N. Boldt, M. Birkholz
Comsol Conference, Cambridge, September 2019 (Poster)
- *Biofunctionalization of a microring resonator via hydrosilylation followed by copper free click chemistry*
A. Henriksson, L. Kasper, C. Schipp, P. Neubauer, M. Birkholz
EnFi 2019 – 12th Engineering of Functional Interfaces, KU Leuven, July 2019 (Poster)
- *Simulation assisted development of microfluidic system with integrated electrodes for dielectrophoresis based analysis and sorting of micro algae C.cohnii*
V. Abt, F. Gringel, P. Neubauer, M. Birkholz
5th BioProScale Symposium, Berlin, March 2018 (Poster)
- *Comparison of Impedance and Permittivity Based Dielectric Sensors for Cell Density Measurements*
M. Lind, R. Mgeladse, F. Jamal, N. Grabbert, J. Wessel, H.D. Ngo, P. Neubauer, M. Birkholz
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- *Microelectronics for Biotechnology*
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- *Biostability investigations of a silicone-encapsulated biosensor implant after 17 month of in vivo exposure*
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- *Evaluation of a micro-electromechanical affinity sensor for the monitoring of bioprocess media*
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- *Auslegung und Simulation von Experimenten in der Bioelektronik*
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A. Körtge, S. Stähle, M. Fraschke, K. Schulz, M. Birkholz, J. B. Nebe, P. Elter
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M. Birkholz, T. Basmer, K.-E. Ehwald, M. Fröhlich, D. Genschow, C. Reich
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 - *Energy budget of an implantable glucose measurement system*
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 - *Biostability of an implantable glucose sensor*
M. Fröhlich, M. Birkholz, K.-E. Ehwald, P. Kulse, O. Fursenko, J. Katzer
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 - *Evaluation of CMOS-established metals for interdigitated array microelectrodes*
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M. Birkholz, M. Fröhlich, T. Basmer, S. Trippel, S. Junne, P. Neubauer
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 - *Lithographic Aspects for the Fabrication of BiCMOS-embedded BioMEMS and RF-MEMS*
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- *Alignment Technology for Backside Integration Technique*
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T. Basmer, M. Birkholz, O. Stecklina, P. Langendörfer
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- *Systemarchitektur intelligenter Sensorimplantate*
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- *Elastomechanical Constants of TiN beams determined by laser vibrometry*
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- *Strukturelle Charakterisierung von 2D Proteinkristallen auf Halbleitern mittels Röntgenbeugung unter streifendem Einfall*
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- *Corrosion-resistant metal electrodes from a CMOS process for bioelectronic applications*
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VI. Teaching

15. - [Internet und Privatheit](#)
16. M. Birkholz, F. Pallas, F.-J. Schmidt, F. Tschorsch
Sommersemester 2019 & 2021
Technische Universität Berlin

9. - [Einführung in die Bioelektronik](#)
14. M. Birkholz
Integrierte Lehrveranstaltung Sommersemester 2014 - 2021
Technische Universität Berlin

- 7.-8. *Einführung in die Bioelektronik – Materialien, Prozesse, Anwendungen*
M. Birkholz
Vorlesung Sommersemester 2012 und 2013
Technische Universität Berlin

6. *Introduction to Bioelectronics – Processes, Devices and Applications*
M. Birkholz
Einwöchiges Schwerpunktseminar, April 2009
Universität Salerno, Italien

5. *Physik und Analytik dünner Schichten*
M. Birkholz
Vorlesung Sommersemester 2007
Fakultät 1 für Mathematik, Naturwissenschaften und Informatik
Brandenburgische Technische Universität (BTU) Cottbus

4. *Development of 101 Exercises within “Thin Film Analysis by X-ray Scattering”*
M. Birkholz
Also published at the Internet site www.thinfilm-at.com, 2006

3. *Physik und Analytik dünner Schichten*
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Fakultät 1 für Mathematik, Naturwissenschaften und Informatik
Brandenburgische Technische Universität (BTU) Cottbus

2. *Sensoren*
M. Lux-Steiner, M. Birkholz
Experimentelles Lehrseminar am Fachbereich Physik der FU Berlin
Sommersemester 1997

1. *Nicht-nukleare Energieforschung*
M. Lux-Steiner, M. Birkholz, J. Beier, B. Pietzak
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Wintersemester 1996/97