

Publication List 2014/2015

Journal Papers 2014-2015

J1	I. Dirnstorfer, D. K. Simon, B. Leszczynska, and T. Mikolajick „Silicon heterojunction metal wrap through solar cells – a 3D TCAD simulation study“ <i>EPJ Web of Conferences</i> , 79, 01004, 2014.
J2	J. Trommer, A. Heinzig, S. Slesazeck, T. Mikolajick, and W. M. Weber „Elementary aspects for circuit implementation of reconfigurable nanowire transistors“ <i>IEEE Electron Device Letters</i> , 35 (1), 141–143, 2014.
J3	D. Nozaki, J. Kunstmann, F. Zörgiebel, S. Pregl, L. Baraban, W. M. Weber, T. Mikolajick, and G. Cuniberti „Ionic effects on the transport characteristics of nanowire-based FETs in a liquid environment“ <i>Nano Res.</i> , 7 (3), 380–389, 2014.
J4	F. M. Zörgiebel, S. Pregl, L. Römhildt, J. Opitz, W. Weber, T. Mikolajick, L. Baraban, and G. Cuniberti „Schottky barrier-based silicon nanowire pH sensor with live sensitivity control“ <i>Nano Research</i> , 7 (2), 263–271, 2014.
J5	F. Schubert, U. Merkel, T. Mikolajick, and S. Schmult „Influence of substrate quality on structural properties of AlGaN/GaN superlattices grown by molecular beam epitaxy“ <i>Journal of Applied Physics</i> , 115 (8), 083511, 2014.
J6	S. Knebel, U. Schroeder, D. Zhou, T. Mikolajick, and G. Krautheim „Conduction mechanisms and breakdown characteristics of Al ₂ O ₃ -doped ZrO ₂ high-k dielectrics for three-dimensional stacked metal-insulator-metal capacitors“ <i>IEEE Transactions on Device and Materials Reliability</i> , 14 (1), 154–160, 2014.
J7	D. Zhou, J. Xu, J. Müller, and U. Schroeder „Ferroelectric and antiferroelectric properties of Si-doped HfO ₂ thin films“ <i>Acta Physica Sinica</i> , 63 (11), 117703, 2014.
J8	S. Clima, D. J. Wouters, C. Adelmann, T. Schenk, U. Schroeder, M. Jurczak, and G. Pourtois „Identification of the ferroelectric switching process and dopant-dependent switching properties in orthorhombic HfO ₂ : A first principles insight“ <i>Applied Physics Letters</i> , 104 (9), 092906, 2014.
J9	J. Liberis, M. Ramonas, E. Šermukšnis, P. Sakalas, N. Szabo, M. Schuster, A. Wachowiak, and A. Matulionis „Hot-phonon lifetime in Al _{0.23} Ga _{0.77} N/GaN channels“ <i>Semiconductor Science and Technology</i> , 29 (4), 045018, 2014.
J10	E. Nadimi, G. Roll, S. Kupke, R. Ottking, P. Plänitz, C. Radehaus, M. Schreiber, R. Agaiby, M. Trentzsch, S. Knebel, S. Slesazeck, and T. Mikolajick „The degradation process of high-gate-stacks: A combined experimental and first principles investigation“ <i>IEEE Transactions on Electron Devices</i> , 61 (5), 1278–1283, 2014.
J11	F. Benner, P. M. Jordan, C. Richter, D. K. Simon, I. Dirnstorfer, M. Knaut, J. W. Bartha, and T. Mikolajick „Atomic layer deposited high-k nanolaminates for silicon surface passivation“ <i>Journal of Vacuum Science & Technology B</i> , 32 (3), 03D110, 2014.
J12	C. Eichenseer, G. Pöppel, and T. Mikolajick „Localization of temperature sensitive areas on analog circuits“ <i>Microelectronics Journal</i> , 45 (6), 734–739, 2014.
J13	D. K. Simon, P. M. Jordan, I. Dirnstorfer, F. Benner, C. Richter, and T. Mikolajick „Symmetrical Al ₂ O ₃ -based passivation layers for p- and n-type silicon“ <i>Solar Energy Materials and Solar Cells</i> , 131, 72–76, 2014.
J14	T. You, Y. Shuai, W. Luo, N. Du, D. Bürger, I. Skorupa, R. Hübner, S. Henker, C. Mayr, R. Schüffny, T. Mikolajick, O. G. Schmidt, and H. Schmidt „Exploiting memristive BiFeO ₃ bilayer structures for compact sequential logics“ <i>Advanced Functional Materials</i> , 24 (22), 3357–3365, 2014.
J15	S. Döring, A. Wachowiak, U. Winkler, M. Richter, J. Goehler, H. Roetz, S. Eckl, and T. Mikolajick „Scanning Spreading Resistance Microscopy analysis of locally blocked implant sites“ <i>Microelectronic Engineering</i> , 122, 77–81, 2014.
J16	A. Singh, F. Nehm, L. Müller-Meskamp, C. Hossbach, M. Albert, U. Schroeder, K. Leo, and T. Mikolajick „OLED compatible water-based nanolaminate encapsulation systems using ozone based starting layer“ <i>Organic Electronics</i> , 15, 2587–2592, 2014.
J17	I. Dirnstorfer, D. K. Simon, M. Jordan, and T. Mikolajick „Near surface inversion layer recombination in Al ₂ O ₃ passivated n-type silicon“ <i>Journal of Applied Physics</i> , 116 (4), 044112, 2014.
J18	U. Schroeder, E. Yurchuk, J. Müller, D. Martin, T. Schenk, Polakowski, C. Adelmann, M. I. Popovici, S. V. Kalinin, and T. Mikolajick „Impact of different dopants on the switching properties of ferroelectric hafniumoxide“ <i>Japanese Journal of Applied Physics</i> , 53 (8S1), 08LE02, 2014.
J19	S. Döring, R. Rudolf, M. Pinkert, H. Rötz, C. Wagner, S. Eckl, M. Strasser, A. Wachowiak, and T. Mikolajick „Scanning spreading resistance microscopy for failure analysis of nLDMOS devices with decreased breakdown voltage“ <i>Microelectronics Reliability</i> , 54 (9), 2128–2132, 2014.

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J20	H. Mähne, H. Wylezich, F. Hanzig, S. Slesazeck, D. Rafaja, and T. Mikolajick „Analog resistive switching behavior of Al/Nb ₂ O ₅ /Al device“ <i>Semiconductor Science and Technology</i> , 29 (10), 104002, 2014.
J21	J. Müller, P. Polakowski, S. Müller, and T. Mikolajick „Ferroelectric hafnium oxide based materials and devices: Assessment of current status and future prospects“ <i>ECS Transactions</i> , 64 (8), 159–168, 2014.
J22	D. Martin, J. Müller, T. Schenk, T. M. Arruda, A. Kumar, E. Strelcov, E. Yurchuk, S. Müller, D. Pohl, U. Schroeder, S. V. Kalinin, and T. Mikolajick, „Ferroelectricity in Si-doped HfO ₂ revealed: A binary lead-free ferroelectric“ <i>Advanced Materials</i> , 26(48), 8198–8202, 2014.
J23	T. Mikolajick, S. Müller, T. Schenk, E. Yurchuk, S. Slesazeck, U. Schroeder, S. Flachowsky, R. van Bentum, S. Kolodinski, P. Polakowski, and J. Müller „Doped hafnium oxide – An enabler for ferroelectric field effect transistors“ <i>Advances in Science and Technology</i> , 95, 136–145, 2014.
J24	H. Wylezich, H. Mähne, J. Rensberg, C. Ronning, P. Zahn, S. Slesazeck, and T. Mikolajick „Local ion irradiation-induced resistive threshold and memory switching in Nb ₂ O ₅ /NbO _x films“ <i>ACS Appl. Mater. Interfaces</i> , 6 (20), 17474–17480, 2014.
J25	J. Beister, A. Wachowiak, A. Heinzig, J. Trommer, T. Mikolajick, and W. M. Weber „Temperature dependent switching behaviour of nickel silicided andoped silicon nanowire devices“ <i>Physica Status Solidi C</i> , 11 (11), 1611–1617, 2014.
J26	T. Schenk, U. Schroeder, M. Pešić, M. Popovici, Y. V. Pershin, and T. Mikolajick „Electric field cycling behavior of ferroelectric hafnium oxide“, <i>ACS Applied Materials & Interfaces</i> , 6 (22), 19744–19751, 2014.
J27	W. M. Weber, A. Heinzig, J. Trommer, M. Grube, F. Kreupl, and T. Mikolajick „Reconfigurable nanowire electronics-Enabling a single CMOS circuit technology“ <i>IEEE Transactions on Nanotechnology</i> , 13 (6), 1020–1028, 2014.
J28	E. Yurchuk, J. Müller, J. Paul, T. Schlösser, D. Martin, R. Hoffmann, S. Müller, S. Slesazeck, U. Schroeder, R. Böschke, R. van Bentum, and T. Mikolajick „Impact of scaling on the performance of HfO ₂ -based ferroelectric field effect transistors“ <i>IEEE Transactions on Electron Devices</i> , 61 (11), 3699–3706, 2014.
J29	L. Jin, Y. Shuai, X. Ou, P. F. Siles, H. Z. Zeng, T. You, N. Du, D. Bürger, I. Skorupa, S. Zhou, W. B. Luo, C. G. Wu, W. L. Zhang, T. Mikolajick, O. G. Schmidt, and H. Schmidt „Resistive switching in unstructured, polycrystalline BiFeO ₃ thin films with downscaled electrodes“ <i>Physica Status Solidi A</i> , 211 (11), 2563–2568, 2014.
J30	E. Baek, S. Pregl, M. Shaygan, L. Römhildt, W. M. Weber, T. Mikolajick, D. A. Ryndyk, L. Baraban, and G. Cuniberti „Optoelectronic switching of nanowire-based hybrid organic/oxide/semiconductor field-effect transistors“ <i>Nano Research</i> , 8(4), 1229–1240, 2014.
J31	A. Krause, W. M. Weber, D. Pohl, B. Rellinghaus, M. Verheijen, and T. Mikolajick „Investigation of embedded perovskite nanoparticles for enhanced capacitor permittivities“ <i>ACS Applied Materials & Interfaces</i> , 6 (22), 19737–19743, 2014.
J32	T. You, N. Du, S. Slesazeck, T. Mikolajick, G. Li, D. Bürger, I. Skorupa, H. Stöcker, B. Abendroth, A. Beyer, K. Volz, O. G. Schmidt, and H. Schmidt „Bipolar electric-field enhanced trapping and detrapping of mobile donors in BiFeO ₃ memristors“ <i>ACS Applied Materials & Interfaces</i> , 6 (22), 19758–19765, 2014.
J33	W. M. Weber, A. Heinzig, J. Trommer, D. Martin, M. Grube, and T. Mikolajick „Reconfigurable nanowire electronics – A review“, <i>Solid-State Electronics</i> , 102, 12–24, 2014.
J34	T. Schenk, E. Yurchuk, S. Müller, U. Schroeder, S. Starschich, U. Böttger, and T. Mikolajick „About the deformation of ferroelectric hystereses“ <i>Applied Physics Reviews</i> , 1 (4), 041103, 2014.
J35	C. Eichenseer, G. Poeppel, and T. Mikolajick „Energy monitoring of high dose ion implantation in semiconductors via photocurrent measurement“ <i>Microelectronics Reliability</i> , 55(9), 1369–1372, 2015.
J36	A. Krause, W. M. Weber, D. Pohl, B. Rellinghaus, A. Kersch, and T. Mikolajick „Investigation of band gap and permittivity of the perovskite CaTiO ₃ in ultrathin layers“ <i>Journal of Physics D: Applied Physics</i> , 48 (41), 415304, 2015.
J37	M. Pešić, S. Knebel, K. Cho, C. Jung, J. Chang, H. Lim, N. Kolomiiets, V. V. Afanas'ev, T. Mikolajick, and U. Schroeder „Conduction barrier offset engineering for DRAM capacitor scaling“, <i>Solid-State Electronics</i> , 115(B), 133–139, 2016.
J38	H. Wylezich, E. Reinhardt, S. Slesazeck, and T. Mikolajick, „Integration of niobium oxide-based resistive switching cells with different select properties into nanostructured cross-bar arrays“ <i>Semiconductor Science and Technology</i> , 30 (11), 115014, 2015.
J39	C. Struzzi, N. I. Verbitskiy, A. V. Fedorov, A. Nefedov, O. Frank, M. Kalbac, G. Di Santo, M. Panighel, A. Goldoni, J. Gärtner, W. Weber, M. Weinl, M. Schreck, C. Wöll, H. Sachdev, A. Grüneis, and L. Petaccia „High-quality graphene on single crystal Ir(1 1 1) films on Si(1 1 1) wafers: Synthesis and multi-spectroscopic characterization“, <i>Carbon</i> , 81, 167–173, 2015.

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J40	C. Hoßbach, F. Nehm, A. Singh, H. Klumbies, D. Fischer, C. Richter, U. Schroeder, M. Albert, L. Müller-Meskamp, K. Leo, T. Mikolajick, and J. W. Bartha „Integration of molecular-layer-deposited aluminum alkoxide interlayers into inorganic nanolaminate barriers for encapsulation of organic electronics with improved stress resistance“ <i>Journal of Vacuum Science & Technology A</i> , 33 (1), 01A119, 2015.
J41	J. Müller, P. Polakowski, S. Müller, and T. Mikolajick „Ferroelectric hafnium oxide based materials and devices: assessment of current status and future prospects“ <i>ECS Journal of Solid State Science and Technology</i> , 4 (5), N30–N35, 2015.
J42	A. Winzer, N. Szabó, A. Wachowiak, P. M. Jordan, J. Heitmann, and T. Mikolajick „Impact of postdeposition annealing upon film properties of atomic layer deposition-grown Al ₂ O ₃ on GaN“ <i>Journal of Vacuum Science & Technology B</i> , 33 (1), 01A106, 2015.
J43	H. Wylezich, H. Mähne, A. Heinrich, S. Slesazeck, J. Rensberg, C. Ronning, Zahn, and T. Mikolajick „Adjusting the forming step for resistive switching in Nb ₂ O ₅ by ion irradiation“ <i>Journal of Vacuum Science & Technology B</i> , 33 (1), 01A105, 2015.
J44	H. Klumbies, P. Schmidt, M. Hänel, A. Singh, U. Schroeder, C. Richter, T. Mikolajick, C. Hoßbach, M. Albert, J. W. Bartha, K. Leo, and L. Müller-Meskamp „Thickness dependent barrier performance of permeation barriers made from atomic layer deposited alumina for organic devices“ <i>Organic Electronics</i> , 17, 138–143, 2015.
J45	A. Schmid, C. Schroeter, R. Otto, M. Schuster, V. Klemm, D. Rafaja, and J. Heitmann „Microstructure of V-based ohmic contacts to AlGaN/GaN heterostructures at a reduced annealing temperature“ <i>Applied Physics Letters</i> , 106 (5), 053509, 2015.
J46	P. M. Jordan, D. K. Simon, T. Mikolajick, and I. Dirnstorfer „BiasMDP: carrier lifetime characterization technique with applied bias voltage“ <i>Applied Physics Letters</i> , 106 (6), 061602, 2015.
J47	T. Schenk, U. Schroeder, and T. Mikolajick, „Dynamic leakage current compensation revisited“ <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 62(3), 596–599, 2015.
J48	R. Ötting, S. Kupke, E. Nadimi, R. Leitsmann, F. Lazarevic, P. Plänitz, G. Roll, S. Slesazeck, M. Trentzsch, and T. Mikolajick „Defect generation and activation processes in HfO ₂ thin films: Contributions to stress-induced leakage currents“ <i>Phys. Status Solidi A</i> , 212(39), 547–553, 2015.
J49	M. H. Park, Y. H. Lee, H. J. Kim, Y. J. Kim, T. Moon, K. D. Kim, J. Müller, A. Kersch, U. Schroeder, T. Mikolajick, and C. S. Hwang, „Ferroelectricity and antiferroelectricity of doped thin HfO ₂ -based films“ <i>Advanced Material</i> , 27(11), 1811–1831, 2015.
J50	H. Schmidt, T. Mikolajick, R. Waser, and E. Linn, „Big Data ohne Energiekollaps“ <i>Physik in unserer Zeit</i> , 46 (2), 84–89, 2015.
J51	A. Ascoli, S. Slesazeck, H. Mähne, R. Tetzlaff, and T. Mikolajick, „Nonlinear dynamics of a locally-active memristor“ <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 62(4), 1165–1174, 2015.
J52	A. Heinrich, J. Bischoff, K. Meiner, U. Richter, T. Mikolajick, and I. Dirnstorfer „Interpretation of azimuthal angle dependence of periodic gratings in Mueller matrix spectroscopic ellipsometry“ <i>Journal of the Optical Society of America A</i> , 32(4), 604, 2015.
J53	X. Sang, E. D. Grimley, T. Schenk, U. Schroeder, and J. M. LeBeau „On the structural origins of ferroelectricity in HfO ₂ thin films“ <i>Applied Physics Letters</i> , 106(16), 162905, 2015.
J54	S. Kupke, S. Knebel, J. Ocker, S. Slesazeck, R. Agaiby, M. Trentzsch, and T. Mikolajick „Experimental proof of the drain-side dielectric breakdown of HKMG nMOSFETs under logic Circuit operation“ <i>IEEE Electron Device Letters</i> , 36(5), 430–432, 2015.
J55	M. Hoffmann, T. Schenk, I. Kulemanov, C. Adelmann, M. Popovici, U. Schroeder, and T. Mikolajick „Low temperature compatible hafnium oxide based ferroelectrics“ <i>Ferroelectrics</i> , 480(1), 16–23, 2015.
J56	J. Beister, A. Wachowiak, R. Boschke, T. Herrmann, M. Uhlarz, and T. Mikolajick „Mobility Investigations on Strained 30-nm High- Metal Gate MOSFETs by Geometrical Magnetoresistance Effect“ <i>IEEE Transactions on Electron Devices</i> , 62(6), 1819–1825, 2015.
J57	S. Knebel, M. Pešić, K. Cho, J. Chang, H. Lim, N. Kolomiets, V. V. Afanas'ev, U. Muehle, U. Schroeder, and T. Mikolajick „Ultra-thin ZrO ₂ /SrO/ZrO ₂ insulating stacks for future dynamic random access memory capacitor applications“ <i>Journal of Applied Physics</i> , 117(22), 224102, 2015.
J58	F. Hanzig, H. Mähne, J. Vesely, H. Wylezich, S. Slesazeck, A. Leuteritz, M. Zschornak, M. Motylenko, V. Klemm, T. Mikolajick, and D. Rafaja, „Effect of the stoichiometry of niobium oxide on the resistive switching of Nb ₂ O ₅ based metal-insulator-metal stacks“ <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 202, 122–127, 2015.
J59	J. Trommer, A. Heinzig, T. Baldauf, S. Slesazeck, T. Mikolajick, and W. M. Weber „Functionality-enhanced logic gate design enabled by symmetrical reconfigurable silicon nanowire transistors“ <i>IEEE Transactions on Nanotechnology</i> , 14(4), 689–698, 2015.

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J60	S. Banerjee, M. Löffler, U. Muehle, K. Berent, A. Heinzig, J. Trommer, W. Weber, and E. Zschech „TEM Study of Schottky Junctions in Reconfigurable Silicon Nanowire Devices“ <i>Advanced Engineering Materials</i> , 2015.
J61	S. Döring, A. Wachowiak, M. Rochel, C. Nowak, M. Hoffmann, U. Winkler, M. Richter, H. Rötz, S. Eckl, and T. Mikolajick „Polycrystalline silicon gate originated CMOS device failure investigated by Scanning Spreading Resistance Microscopy“, <i>Microelectronic Engineering</i> , 142, 40–46, 2015.
J62	D. Karnaushenko, B. Ibarlucea, S. Lee, G. Lin, L. Baraban, S. Pregl, M. Melzer, D. Makarov, W. M. Weber, T. Mikolajick, O. G. Schmidt, and G. Cuniberti „Flexible Electronics: Light Weight and Flexible High-Performance Diagnostic Platform“ <i>Advanced Healthcare Materials</i> , 4(10), 1419–1419, 2015.
J63	D.-Y. Jeon, S. Pregl, S. J. Park, L. Baraban, G. Cuniberti, T. Mikolajick, and W. M. Weber „Scaling and graphical transport-map analysis of ambipolar Schottky-barrier thin-film transistors based on a parallel array of Si nanowires“, <i>Nano Letters</i> , 15(7), 4578–4584, 2015.
J65	X. Sang, E. D. Grimley, T. Schenk, U. Schroeder, and J. M. LeBeau „Origin of Ferroelectricity in Thin Film HfO ₂ Probed by Revolving STEM and PACBED“ <i>Microscopy and Microanalysis</i> , 21(S3), 779–780, 2015.
J66	M. Hoffmann, U. Schroeder, T. Schenk, T. Shimizu, H. Funakubo, O. Sakata, D. Pohl, M. Drescher, C. Adelmann, R. Materlik, A. Kersch, and T. Mikolajick, „Stabilizing the ferroelectric phase in doped hafnium oxide“ <i>Journal of Applied Physics</i> , 118(7), 072006, 2015.
J67	F. Schubert, S. Zybell, J. Heitmann, T. Mikolajick, and S. Schmult „Influence of the substrate grade on structural and optical properties of GaN/AlGaN superlattices“ <i>Journal of Crystal Growth</i> , 425, 145–148, 2015.
J68	M. Schuster, A. Wachowiak, L. Groh, N. Szabó, U. Merkel, A. Jahn, and T. Mikolajick „Using vertical capacitance–voltage measurements for fast on-wafer characterization of epitaxial GaN-on-Si material“, <i>Physica Status Solidi A</i> , 212(12), 2897–2902, 2015.
J69	J. Müller, P. Polakowski, J. Paul, S. Riedel, R. Hoffmann, M. Drescher, S. Slesazeck, S. Müller, H. Mulaosmanovic, U. Schroeder, T. Mikolajick, S. Flachowsky, E. Erben, E. Smith, R. Binder, D. Triyoso, J. Metzger, and S. Kolodinski „Integration Challenges of Ferroelectric Hafnium Oxide Based Embedded Memory“ <i>ECS Transactions</i> , 69(3), 85–95, 2015.
J70	T. Schenk, M. Hoffmann, J. Ocker, M. Pešić, T. Mikolajick, and U. Schroeder „Complex internal bias fields in ferroelectric hafnium oxide“ <i>ACS Applied Materials & Interfaces</i> , 7(36), 20224–20233, 2015.
J71	A. Winzer, N. Szabó, J. Ocker, R. Hentschel, M. Schuster, F. Schubert, J. Gärtner, A. Wachowiak, and T. Mikolajick „Detailed analysis of oxide related charges and metal-oxide barriers in terrace etched Al ₂ O ₃ and HfO ₂ on AlGaN/GaN heterostructure capacitors“, <i>Journal of Applied Physics</i> , 118(12), 124106, 2015.
J72	F. Nehm, H. Klumbies, C. Richter, A. Singh, U. Schroeder, T. Mikolajick, T. Mönch, C. Hoßbach, M. Albert, J. W. Bartha, K. Leo, and L. Müller-Meskamp, „Breakdown and Protection of ALD Moisture Barrier Thin Films“ <i>ACS Applied Materials & Interfaces</i> , 7(40), 22121–22127, 2015.
J73	T. Baldauf, A. Heinzig, J. Trommer, T. Mikolajick, and W. M. Weber „Stress-dependent performance optimization of reconfigurable silicon nanowire transistors“ <i>IEEE Electron Device Letters</i> , 36(10), 991–993, 2015.
J74	Y. Guan, D. Zhou, J. Xu, X. Liu, F. Cao, X. Dong, J. Müller, T. Schenk, and U. Schroeder „The Rayleigh law in silicon doped hafnium oxide ferroelectric thin films“ <i>Physica Status Solidi - Rapid Research Letters</i> , 9(10), 589–593, 2015.
J75	M. Pešić, S. Slesazeck, T. Schenk, U. Schroeder, and T. Mikolajick „Impact of charge trapping on the ferroelectric switching behavior of doped HfO ₂ “ <i>Physica Status Solidi A</i> , 233–236, 2015.
J76	D. K. Simon, T. Henke, M. Jordan, F. P. G. Fengler, T. Mikolajick, J. W. Bartha, and I. Dirnstorfer „Low-thermal budget flash light annealing for Al ₂ O ₃ surface passivation“ <i>Physica Status Solidi - Rapid Research Letters</i> , 9(10), 631–635, 2015.
J77	D. Zhou, Y. Guan, M. M. Vopson, J. Xu, H. Liang, F. Cao, X. Dong, J. Mueller, T. Schenk, and U. Schroeder „Electric field and temperature scaling of polarization reversal in silicon doped hafnium oxide ferroelectric thin films“ <i>Acta Materialia</i> , 99, 240–246, 2015.
J78	J. Zhang, J. Trommer, W. M. Weber, Gaillardon, and G. De Micheli „On Temperature Dependency of Steep Subthreshold Slope in Dual-Independent-Gate FinFET“ <i>IEEE Journal of the Electron Devices Society</i> , 3(6), 452–456, 2015.
J79	S. Slesazeck, H. Mähne, H. Wylezich, A. Wachowiak, J. Radhakrishnan, A. Ascoli, R. Tetzlaff, and T. Mikolajick „Physical model of threshold switching in NbO ₂ based memristors“ <i>ACS Advances</i> , 124, 102318–102322, 2015
J80	M. Hoffmann, U. Schroeder, C. Künneth, A. Kersch, S. Starschich, U. Böttger, and T. Mikolajick „Ferroelectric phase transitions in nanoscale HfO ₂ films enable giant pyroelectric energy conversion and highly efficient supercapacitors“ <i>Nano Energy</i> , 18, 154–164, 2015

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J81	D. K. Simon, P. M. Jordan, T. Mikolajick, and I. Dirnstorfer "On the Control of the Fixed Charge Densities in Al ₂ O ₃ -Based Silicon Surface Passivation Schemes" <i>ACS Applied Materials & Interfaces</i> , 7, 28215-28222, 2015
J82	S. Banerjee, U. Muehle, M. Löffler, A. Heinzig, J. Trommer, and E. Zschech "Preparation and characterization of silicon nanowires using SEM/FIB and TEM" <i>International Journal of Materials Research</i> , 106, 697-702, 2015

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C1	A. Ascoli, S. Slesazeck, R. Tetzlaff, H. Mahne, and T. Mikolajick "Unfolding the local activity of a memristor" <i>Proceeding of 14th CNNA</i> , Notre Dame, USA, 1-2, 2014.
C2	W. M. Weber, J. Trommer, M. Grube, A. Heinzig, M. Konig, and T. Mikolajick "Reconfigurable silicon nanowire devices and circuits: Opportunities and challenges" <i>Proceeding of Design, Automation and Test in Europe Conference and Exhibition</i> , Dresden, Germany, 2014.
C3	S. Kupke, S. Knebel, S. Rahman, S. Slesazeck, T. Mikolajick, R. Agaiby, and M. Trentzsch "Dynamic off-state TDDB of ultra-short channel HKMG nFETs and its implications on CMOS logic reliability" <i>Proceeding of IEEE International Reliability Physics Symposium</i> , Waikoloa, USA, 5B.1.1-5B.1.6, 2014.
C4	E. Yurchuk, S. Müller, D. Martin, S. Slesazeck, U. Schroeder, T. Mikolajick, J. Müller, J. Paul, R. Hoffmann, J. Sundqvist, T. Schlosser, R. Boschke, R. van Bentum, and M. Trentzsch "Origin of the endurance degradation in the novel HfO ₂ -based 1T ferroelectric non-volatile memories" <i>Proceeding of International Reliability Physics Symposium</i> , Waikoloa, USA, 2E.5.1-2E.5.5, 2014.
C5	J. Ocker, S. Kupke, S. Slesazeck, T. Mikolajick, E. Erben, M. Drescher, A. Naumann, F. Lazarevic, and R. Leitsmann "Influence of nitrogen trap states on the electronic properties of high-k metal gate transistors" <i>Proceeding of IEEE International Integrated Reliability Workshop Final Report (IIRW)</i> , Fallen Leaf Lake, USA, 86-89, 2014.
C6	A. Heinrich, I. Dirnstorfer, J. Bischoff, K. Meiner, H. Ketelsen, U. Richter, and T. Mikolajick "Photomask CD and LER characterization using Mueller matrix spectroscopic ellipsometry" <i>Proceedings of 30th European Mask and Lithography Conference</i> , Dresden, Germany, 92310L, 2014.
C7	M. Stuiber, L. H. W. van Beveren, B. C. Johnson, W. M. Weber, A. Heinzig, J. Beister, D. N. Jamieson, and J. C. McCallum "Development Of nanowire devices with quantum functionalities" <i>Proceeding of Conference on Optoelectronic and Microelectronic Materials Devices (COMMAD)</i> , Perth, Australia, 75-76, 2014.
C8	A. Krause, J. Brückner, S. Dörfler, F. M. Wisser, H. Althues, M. Grube, J. Martin, J. Grothe, T. Mikolajick, and W. M. Weber, "Stability and performance of heterogeneous anode assemblies of silicon nanowires on carbon meshes for lithium-sulfur battery applications" <i>Proceeding of Semiconductor Nanowires—Growth, Physics, Devices and Applications (Symposium LL)</i> , Boston, USA, 1751, 2015.
C9	I. Dirnstorfer, N. Schilling, S. Koerner, P. Gierth, D. Sontag, P. M. Jordan, D. K. Simon, F. P. G. Fengler, T. Mikolajick, D. Linaschke, I. Dani, M. Marcinkowski, M. Eberstein, U. Rebenklau, and U. Partsch "Development of Silicon Heterojunction Metal Wrap through Solar Cells" <i>Proceeding of 29th European Photovoltaic Solar Energy Conference and Exhibition</i> , Amsterdam, Netherlands, 1044-1048, 2015.
C10	D. K. Simon, F. P. G. Fengler, P. M. Jordan, D. Sontag, T. Mikolajick, and I. Dirnstorfer "Low Temperature Deposition of High Performance ITO Using a Co-Plasma Approach" <i>Proceeding of 29th European Photovoltaic Solar Energy Conference and Exhibition</i> , Amsterdam, Netherlands, 1028-1031, 2015.
C11	K. Cho, M. Pesic, S. Knebel, C. Jung, J. Chang, H. Lim, N. Kolomiets, V. V. Afanas'ev, U. Schroeder, and T. Mikolajick "Schottky barrier height engineering for next generation DRAM capacitors" <i>Proceeding of Joint International EUROSOI Workshop and International Conference on Ultimate Integration on Silicon</i> , Bologna, Italy, 129–132, 2015.
C12	J. Trommer, S. Slesazeck, W. M. Weber, A. Heinzig, T. Baldauf, and T. Mikolajick "Effect of independently sized gates on the delay of reconfigurable silicon nanowire transistor based circuits" <i>Proceeding of Joint International EUROSOI Workshop and International Conference on Ultimate Integration on Silicon</i> , Bologna, Italy, 17–20, 2015.
C13	A. Ascoli, R. Tetzlaff, S. Slesazeck, H. Mähne, and T. Mikolajick "Stability analysis supports memristor circuit design" <i>Proceeding of IEEE International Symposium on Circuits and Systems</i> , Lisbon, Portugal, 1138-1141, 2015.
C14	S. Müller, S. Slesazeck, T. Mikolajick, J. Müller, P. Polakowski, and S. Flachowsky "Next-generation ferroelectric memories based on FE-HfO ₂ " <i>International Symposium on Integrated Functionalities and Piezoelectric Force Microscopy Workshop, Joint IEEE Proceeding of International Symposium on the Applications of Ferroelectric</i> , Singapore, 233–236, 2015.

Conference Proceedings 2014-2015

C15	I. Dirnstorfer, N. Schilling, S. Koerner, P. Gierth, A. Waltinger, B. Leszczynska, D. K. Simon, J. Gärtner, P. M. Jordan, T. Mikolajick, I. Dani, M. Eberstein, L. Rebenkau, and J. Krause „Via hole conditioning in silicon heterojunction metal wrap through solar cells“ <i>Proceeding of 5th International Conference on Silicon Photovoltaics, SiliconPV, Energy Procedia</i> , 77, 458–463, 2015.
C16	P. M. Jordan, D. K. Simon, F. P. G. Fengler, T. Mikolajick, and I. Dirnstorfer „2D mapping of chemical and field effect passivation of Al ₂ O ₃ on silicon substrates“ <i>Proceeding of 5th International Conference on Silicon Photovoltaics, SiliconPV, Energy Procedia</i> , 77, 91–98, 2015.
C17	A. Krause, M. Grube, T. Mikolajick, and W. Weber „Comparison of Silicon Nanowire Growth on SiO ₂ and on Carbon Substrates“ <i>Proceeding of 16th International Conference on Advanced Batteries, Accumulators and Fuel Cells (ABA), Brno, Czech Republic, ECS Transactions</i> 70, 2015

Invited Talks 2014-2015

I1	W. M. Weber „Reconfigurable nanowire transistors: enhanced functionality driven by the unique properties of metal-semiconductor nano-junctions“ presented at the <i>International Conference on Small Science (ICSSCI)</i> , Hong Kong, China, 11/12/2014.
I2	U. Schroeder, E. Yurchuk, J. Müller, D. Martin, T. Schenk, C. Richter, C. Adelmann, S. V. Kalinin, U. Böttger, A. Kersch, and T. Mikolajick „Ferroelectricity in doped hafnium oxide“ presented at the <i>IEEE International Symposium on the Applications of Ferroelectric (ISAF)</i> , Pennsylvania, USA, 16/05/2014.
I3	U. Schroeder, E. Yurchuk, J. Müller, D. Martin, T. Schenk, C. Richter, C. Adelmann, S. V. Kalinin, U. Böttger, A. Kersch, and T. Mikolajick „Non-volatile data storage in HfO ₂ -based ferroelectric FETs“ presented at the <i>Semicon Korea</i> , Seoul, Korea, 14/02/2014.
I4	T. Mikojajick, S. Müller, T. Schenk, E. Yurchuk, S. Slesazeck, U. Schroeder, S. Flachowsky, R. van Bentum, S. Kolodinski, P. Polakowski, and J. Müller „Doped hafnium oxide – An enabler for ferroelectric field effect transistors“ presented at the <i>13th International Ceramics Congress & 6th Forum on New Materials (CIMTEC)</i> , Faenza, RA, Italy, 19/06/2014.
I5	W. M. Weber „Dopant free CMOS enabled by strain incorporation into silicon nanowires“ presented at the <i>13th International Workshop on Stress-Induced Phenomena in Microelectronics</i> , Austin, TX, USA, 17/10/2014.
I6	W. M. Weber „Reconfigurable silicon nanowire devices and circuits: Opportunities and challenges“ presented at the <i>Design, Automation and Test in Europe Conference and Exhibition</i> , Dresden, Germany, 28/03/2014.
I7	J. Müller, S. Müller, P. Polakowski, and T. Mikolajick „Ferroelectric hafnium oxide: A game changer to FRAM?“ presented at the <i>14th Non-Volatile Memory Technology Symposium (NVMTS)</i> , Jeju, Korea, 29/10/2014.
I8	W. M. Weber, A. Heinzig, M. Grube, J. Trommer, S. Pregl, T. Baldauf, J. Beister, D.-Y. Jeon, S. J. Park, A. Krause, and T. Mikolajick „Group IV – Nanowire Electronics“ presented at the <i>Nanonet Workshop</i> , Rathen, Germany, 30/09/2014.
I9	U. Schroeder, S. Slesazeck, E. Yurchuk, J. Müller, S. Müller, T. Schenk, D. Martin, T. S. Schlösser, R. van Bentum, S. V. Kalinin, C. Adelmann, and T. Mikolajick „ALD based ferroelectric HfO ₂ “ presented at the <i>DPG Frühjahrstagung</i> , Dresden, Germany, 03/-04/04/2014.
I10	T. Mikolajick, M. Schuster, and A. Wachowiak „GaN basierte Hetero-Fieldeffekttransistoren für die Leistungselektronik“ presented at the <i>2nd EFDS Workshop: Materialien für die Energietechnik</i> , Dresden, Germany, 04/06/2014.
I11	J. Müller, P. Polakowski, S. Müller, and T. Mikolajick „Ferroelectric hafnium oxide based materials and devices: Assessment of current status and future prospects“ presented at the <i>226th ECS Fall Meeting</i> , Cancun, Mexico, 08/10/2014.
I12	A. Wachowiak „GaN Transistors for Power Electronics“ presented at the <i>Power Electronics Conference</i> , SEMICON Europe, Dresden, Germany, 07/10/2015.
I13	J. Müller, P. Polakowski, M. Drescher, J. Paul, S. Riedel, R. Hoffmann, S. Müller, S. Slesazeck, U. Schroeder, T. Mikolajick, S. Flachowsky, E. Erben, E. Smith, R. Binder, J. Triyoso, J. Metzger, and S. Kolodinski „Compatibility and Integratability Challenges of Ferroelectric Hafnium Oxide Based Embedded Memory Solutions“ presented at the <i>228th ECS Meeting</i> , Phoenix, USA, 14/10/2015.

Invited Talks 2014-2015

I14	<p>W. M. Weber, M. Löffler, A. Heinzig, S. Banerjee, W. van Dorp, T. Baldauf, J. Trommer, S. Pregl, U. Mühle, E. Zschech, and T. Mikolajick <i>„Silicidation and Strain Analysis of Silicon Nanowires“</i> <i>presented at The International Conference on Frontiers of Characterization and Metrology for Nanoelectronics (FCMN), Dresden, Germany, 15/04/2015.</i></p>
I15	<p>A. Heinzig, J. Trommer, T. Baldauf, T. Mikolajick, and W. M. Weber <i>„The RFET a reconfigurable nanowire transistor and the realization of novel CMOS circuits“</i> <i>presented at the E-MRS Fall Meeting, Warsaw, Poland, 16/09/2015.</i></p>
I16	<p>W. M. Weber <i>„Anisotropic Nickel Silicidation of Silicon Nanowires and Transistor Applications“</i> <i>presented at the International Interconnect Technology Conference, Grenoble, France, 20/05/2015.</i></p>
I17	<p>W. M. Weber <i>„Highly Cyclable Nanowire Anodes for Li-ion and Li-S Batteries“</i> <i>presented at the Energy-Materials and -Nanotechnology (EMN) East Meeting, Beijing, China, 20/04/2015.</i></p>
I18	<p>I. Dirnstorfer, D. K. Simon, P. M. Jordan, T. Chohan, M. Knaut, J. W. Bartha, and T. Mikolajick <i>„ALD of Al₂O₃-based nanolaminates for solar cell applications“</i> <i>presented at the Atomic Layer Deposition Russia, Moscow-Dolgoprudny, Russia, 22/09/2015.</i></p>
I19	<p>U. Schroeder, T. Schenk, C. Richter, M. Hoffmann, D. Martin, T. Shimizu, H. Funakubo, D. Pohl, C. Adelmann, R. Materlik, A. Kersch, and J. LeBeau <i>„Searching for the Origin of the Ferroelectric Phase in HfO₂“</i> <i>presented at the IEEE International Symposium on Applications of Ferroelectric (ISAF) , Singapore, 27/05/2015.</i></p>
I20	<p>T. Schenk, M. Hoffmann, C. Richter, M. Pešić, S. V. Kalinin, A. Kersch, T. Mikolajick, and U. Schroeder <i>„Doped Hafnium Oxide for Ferroelectric Memories“</i> <i>presented at the MRS Fall Meeting & Exhibit, Boston, USA, 02/12/2015.</i></p>
I21	<p>W. M. Weber <i>„nanowire electronics“, presented at the Dresden Microelectronics Academy – From Moore to Emerging Devices, Dresden, Germany, 06/09/2015.</i></p>
I22	<p>W. M. Weber <i>„Reconfigurable Nanowire Electronics – Towards a Dopant Free Single MOS Technology“</i> <i>presented at the LSI Seminar – EPFL, Lausanne, Switzerland, 11/09/2015.</i></p>
I23	<p>W. M. Weber <i>„Reconfigurable Silicon and Germanium Nanowire Electronics – From Multifunctional Devices to Circuits“</i> <i>presented at the Lund University, Department of Electrical and Information Technology, Lund, Sweden, 28/09/2015.</i></p>
I24	<p>A. Krause, S. Dörfler, M. Piwko, T. Jaumann, and F. M. Wisser <i>„Silicon Nanowire Anodes for Optimized Cycling Stability in Future Li-S Batteries“</i> <i>presented at the Freiberg Silicon Days, Freiberg, Germany, 19/06/2015.</i></p>
I25	<p>M. Grube, A. Krause, W. M. Weber, T. Mikolajick, S. Dörfler, M. Piwko, T. Jaumann, F. M. Wisser, and U. Langklotz <i>„Advances in energy storage by integrating Silicon nanowires to Li based battery systems“</i> <i>presented at the International Conference on Small Science ICSSCI, Phuket, Thailand, 04/11/2015.</i></p>
I26	<p>A. Krause, “Silicon nanowires as anode material in lithium-sulfur full-cells” <i>Presented at Deutsches Zentrum für Luft- und Raumfahrt, Stuttgart, Germany, 28/08/2015</i></p>

Monographs (Book Chapters) 2014-2015

M1	<p>“Unfolding the threshold switching behavior of a memristor” by S. Slesazeck, A. Ascoli, H. Mähne, R. Tetzlaff, and T. Mikolajick, in V. M. Mladenov and P. C. Ivanov, (2014), <i>Nonlinear Dynamics of Electronic Systems</i>, Cham (Switzerland), Springer International Publishing.</p>
M2	<p>“Silicon Nanowires: Fabrication and Applications” by T. Mikolajick and W. M. Weber, in Q. Li, (2015) <i>Anisotropic Nanomaterials: Preparation, Properties, and Applications, Vol. 1</i>, Cham (Switzerland), Springer International Publishing.</p>

Education

PhD thesis

D1	A. Heinzig „Entwicklung und Herstellung rekonfigurierbarer Nanodraht-Transistoren und Schaltungen“ Technische Universität Dresden, <i>PhD thesis (2014)</i>
D2	A. Krause “Ultrathin CaTiO ₃ Capacitors: Physics and Application” Technische Universität Dresden, <i>PhD thesis (2014)</i>
D3	H. Mähne „Herstellung und Charakterisierung von resistiv schaltenden Schichten aus Titanoxid und Nioboxid“ Technische Universität Dresden, <i>PhD thesis (2014)</i>
D4	J. Müller „Ferroelektrizität in Hafniumdioxid und deren Anwendung in nicht-flüchtigen Halbleiterspeichern“ Technische Universität Dresden, <i>PhD thesis (2014)</i>
D5	S. F. Müller “Development of HfO ₂ -Based Ferroelectric Memories for Future CMOS Technology Nodes” Technische Universität Dresden, <i>PhD thesis (2014)</i>
D6	A. Heinrich „Spektroskopische Ellipsometrie zur Bestimmung der Strukturparameter von Fotomasken“ Technische Universität Dresden, <i>PhD thesis (2015)</i>
D7	F. Benner „Herstellung, Charakterisierung und Modellierung dünner aluminium(III)-oxidbasierter Passivierungsschichten für Anwendungen in der Photovoltaik“ Technische Universität Dresden, <i>PhD thesis (2015)</i>
D8	S. Kupke “Reliability of high-k / metal gate field-effect transistors considering circuit operational constraints” Technische Universität Dresden, <i>PhD thesis (2015)</i>
D9	S. Pregl “Fabrication and characterization of a silicon nanowire based Schottky-barrier field effect transistor platform for functional electronics and biosensor applications” Technische Universität Dresden, <i>PhD thesis (2015)</i>
D10	E. Yurchuk “Electrical Characterisation of Ferroelectric Field Effect Transistors based on ferroelectric HfO ₂ thin films” Technische Universität Dresden, <i>PhD thesis (2015)</i>

Publication Statistics

