Publication List 2016/2017

Journal Papers 2016-2017

J1	E. D. Grimley, T. Schenk, X. Sang, M. Pešić, U. Schroeder, T. Mikolajick, and J. M. LeBeau 'Structural Changes Underlying Field-Cycling Phenomena in Ferroelectric HfO_2 Thin Films' *Advanced Electronic Materials*, vol. 2, no. 9, 2016.
J2	M. Hoffmann, M. Pešić, K. Chatterjee, A. I. Khan, S. Salahuddin, S. Slesazeck, U. Schroeder, and T. Mikolajick 'Direct Observation of Negative Capacitance in Polycrystalline Ferroelectric HfO_2' *Advanced Functional Materials*, vol. 26, no. 47, pp. 8643–8649, 2016.
J3	P. Hofmann, M. Krupinski, F. Habel, G. Leibiger, B. Weinert, S. Eichler, and T. Mikolajick 'Novel approach for n-type doping of HVPE gallium nitride with germanium' *Journal of Crystal Growth*, vol. 450, pp. 61–65, 2016.
J4	P. Hofmann, C. Röder, F. Habel, G. Leibiger, F. C. Beyer, G. Gärtner, S. Eichler, and T. Mikolajick 'Silicon doping of HVPE GaN bulk-crystals avoiding tensile strain generation' *Journal of Physics D: Applied Physics*, vol. 49, no. 7, p. 75502, 2016.
J5	I. Ibrahim, T. Gemming, W. M. Weber, T. Mikolajick, Z. Liu, and M. H. Rümmeli 'Current Progress in the Chemical Vapor Deposition of Type-Selected Horizontally Aligned Single-Walled Carbon Nanotubes', *ACS nano*, vol. 10, no. 8, pp. 7248–7266, 2016.
J6	S. Jachalke, P. Hofmann, G. Leibiger, F. S. Habel, E. Mehner, T. Leisegang, D. C. Meyer, and T. Mikolajick 'The pyroelectric coefficient of free standing GaN grown by HVPE' *Applied Physics Letters*, vol. 109, no. 14, p. 142906, 2016.
J7	P. M. Jordan, D. K. Simon, T. Mikolajick, and I. Dirnstorfer 'Trapped charge densities in Al_2O_3-based silicon surface passivation layers' *Journal of Applied Physics*, vol. 119, no. 21, p. 215306, 2016.
J8	A. Krause, S. Dörfler, M. Piwko, F. M. Wisser, T. Jaumann, E. Ahrens, L. Giebeler, H. Althues, S. Schädlich, J. Grothe, 'High Area Capacity Lithium-Sulfur Full-cell Battery with Prelitiathed Silicon Nanowire-Carbon Anodes for Long Cycling Stability', *Scientific Reports*, vol. 6, p. 27982, 2016.
J9	T. Mikolajick, A. Heinzig, J. Trommer, T. Baldauf, and W. Weber 'The RFET-a reconfigurable nanowire transistor and its application to novel electronic circuits and systems' *Semiconductor Science and Technology*, vol. 32, p. 043001, 2016.
J10	S. Mueller, S. Slesazeck, S. Henker, S. Flachowsky, P. Polakowski, J. Paul, E. Smith, J. Müller, and T. Mikolajick 'Correlation between the macroscopic ferroelectric material properties of Si: HfO_2 and the statistics of 28 nm FeFET memory arrays', *Ferroelectrics*, vol. 497, no. 1, pp. 42–51, 2016.
J11	F. Nehm, F. Dollinger, H. Klumbies, L. Müller-Meskamp, K. Leo, A. Singh, C. Richter, U. Schroeder, T. Mikolajick, C. Hossbach, and others, 'Atomic layer deposited TiO_x/AlO_x nanolaminates as moisture barriers for organic devices' *Organic Electronics*, vol. 38, pp. 84–88, 2016.
J12	X. Pan, Y. Shuai, C. Wu, W. Luo, X. Sun, H. Zeng, S. Zhou, R. Böttger, X. Ou, T. Mikolajick, and others 'Rectifying filamentary resistive switching in ion-exfoliated $LiNbO_3$ thin films' *Applied Physics Letters*, vol. 108, no. 3, p. 32904, 2016.
J13	M. Pešić, F. P. G. Fengler, L. Larcher, A. Padovani, T. Schenk, E. D. Grimley, X. Sang, J. M. LeBeau, S. Slesazeck, U. Schroeder, and others, 'Physical Mechanisms behind the Field-Cycling Behavior of HfO2-Based Ferroelectric Capacitors', *Advanced Functional Materials*, vol. 26, no. 25, pp. 4601–4612, 2016.
J14	M. Pešić, M. Hoffmann, C. Richter, T. Mikolajick, and U. Schroeder 'Nonvolatile Random Access Memory and Energy Storage Based on Antiferroelectric Like Hysteresis in ZrO_2' *Advanced Functional Materials*, vol. 26, no. 41, pp. 7486–7494, 2016.
J15	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' *Solid-State Electronics*, vol. 115, pp. 133–139, 2016.
J16	M. Pešić, S. Knebel, M. Geyer, S. Schmelzer, U. Böttger, N. Kolomiiets, V. V. Afanas' ev, K. Cho, C. Jung, J. Chang, and others, 'Low leakage ZrO_2 based capacitors for sub 20 nm dynamic random access memory technology nodes', *Journal of Applied Physics*, vol. 119, no. 6, p. 64101, 2016.
J17	S. Pregl, A. Heinzig, L. Baraban, G. Cuniberti, T. Mikolajick, and W. Weber 'Printable parallel arrays of Si nanowire Schottky-barrier-FETs with tunable polarity for complementary logic' *IEEE Transact. on Nanotechnology,* 15, pp. 549 – 556, 2016.
J18	F. Schubert, S. Wirth, F. Zimmermann, J. Heitmann, T. Mikolajick, and S. Schmult 'Growth condition dependence of unintentional oxygen incorporation in epitaxial GaN' *Science and Technology of Advanced Materials*, vol. 17, no. 1, pp. 239–243, 2016.
J19	J. Schütt, B. Ibarlucea, R. Illing, F. Zörgiebel, S. Pregl, D. Nozaki, W. M. Weber, T. Mikolajick, L. Baraban, and G. Cuniberti, 'Compact nanowire sensors probe microdroplets' *Nano Letters*, vol. 16, no. 8, pp. 4991–5000, 2016.
J20	D. K. Simon, D. Tröger, T. Schenk, I. Dirnstorfer, F. P. Fengler, P. M. Jordan, A. Krause, and T. Mikolajick 'Comparative study of ITO and TiN fabricated by low-temperature RF biased sputtering' *Journal of Vacuum Science & Technology A: Vacuum, Surfaces, and Films*, vol. 34, no. 2, p. 21503, 2016.
J21	A. Winzer, M. Schuster, R. Hentschel, J. Ocker, U. Merkel, A. Jahn, A. Wachowiak, and T. Mikolajick 'Analysis of threshold voltage instability in AlGaN/GaN MISHEMTs by forward gate voltage stress pulses' physica status solidi (a), vol. 213, no. 5, pp. 1246-1251, 2016.

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J22	T. You, L. P. Selvaraj, H. Zeng, W. Luo, N. Du, D. Bürger, I. Skorupa, S. Prucnal, A. Lawerenz, T. Mikolajick, et al. 'An Energy-Efficient, $BiFeO_3$-Coated Capacitive Switch with Integrated Memory and Demodulation Functions' *Advanced Electronic Materials*, vol. 2, p. 1500352, 2016.
J23	E. Yurchuk, J. Müller, S. Müller, J. Paul, M. Pešić, R. van Bentum, U. Schroeder, and T. Mikolajick 'Charge-Trapping Phenomena in HfO_2-Based FeFET-Type Nonvolatile Memories' *IEEE Transactions on Electron Devices*, vol. 63, no. 9, pp. 3501-3507, 2016.
J24	M. H. Park, H. J. Kim, Y. J. Kim, Y. H. Lee, T. Moon, K. D. Kim, S. D. Hyun, F. Fengler, U. Schroeder, and C. S. Hwang, 'Effect of Zr Content on the Wake-Up Effect in $Hf_{1-x}Zr_xO_2$ Films' *ACS Appl. Mater. Interfaces*, vol. 8, no. 24, pp. 15466–15475, 2016.
J25	P. Hofmann, G. Leibiger, M. Krupinski, F. Habel, and T. Mikolajick 'Doping marker layers for ex situ growth characterisation of HVPE gallium nitride' *CrystEngComm,* vol. 19, pp. 788-794, 2017.
J26	H. Mulaosmanovic, J. Ocker, S. Mueller, U. Schroeder, J. Müller, P. Polakowski, S. Flachowsky, R. van Bentum, T. Mikolajick, and S. Slesazeck 'Switching kinetics in nanoscale hafnium oxide based ferroelectric field effect transistors' *ACS Applied Materials & Interfaces,* vol. 9, no. 4, pp. 3792–3798,2017.
J27	M. Park, T. Schenk, C. M. Fancher, E. D. Grimley, C. Zhou, C. Richter, J. M. LeBeau, J. L. Jones, T. Mikolajick, and U. Schroeder 'A comprehensive study on the structural evolution of HfO 2 thin films doped with various dopants' *Journal of Materials Chemistry C*, vol. 5, no. 19, pp. 4677–4690, 2017.
J28	M. H. Park, Y. Hwan Lee, H. Joon Kim, T. Schenk, W. Lee, K. Do Kim, F. P. G. Fengler, T. Mikolajick, U. Schroeder, and C. Seong Hwang 'Surface and grain boundary energy as the key enabler of ferroelectricity in nanoscale hafnia-zirconia: a comparison of model and experiment' *Nanoscale,* vol. 9, no. 28, pp. 9973–9986, 2017.
J29	N. Szabó, A. Wachowiak, A. Winzer, J. Ocker, J. Gärtner, R. Hentschel, A. Schmid, and T. Mikolajick, 'High-k/GaN interface engineering toward AlGaN/GaN MIS-HEMT with improved Vth stability' *Journal of Vacuum Science & Technology B*, vol. 35, no. 1, p. 01A102, 2017.
J30	J. Trommer, A. Heinzig, U. Mühle, M. Löffler, A. Winzer, P. M. Jordan, J. Beister, T. Baldauf, M. Geidel, B. Adolphi, et al. 'Enabling Energy Efficiency and Polarity-Control in Germanium Nanowire Transistors by Individually Gated Nano-Junctions' *ACS nano,* vol. 11, pp 1704–1711, 2017.
J31	W. M. Weber and T. Mikolajick 'Silicon and germanium nanowire electronics: physics of conventional and unconventional transistors' *Rep. Prog. Phys.*, vol. 80, no. 6, p. 66502, 2017.
J32	T. Baldauf, A. Heinzig, J. Trommer, T. Mikolajick, and W. M. Weber 'Tuning the tunneling probability by mechanical stress in Schottky barrier based reconfigurable nanowire transistors' *Solid-State Electronics*, vol. 128, no. C, pp. 148–154, 2017.
J33	S. Schmult, F. Schubert, S. Wirth, A. Großer, T. Mittmann, and T. Mikolajick 'Control of unintentional oxygen incorporation in GaN' *Journal of Vacuum Science & Technology B*, vol. 35, no. 2, p. 02B104, 2017.
J34	F. P. G. Fengler, M. Pešić, S. Starschich, T. Schneller, C. Künneth, U. Böttger, H. Mulaosmanovic, T. Schenk, M. H. Park, R. Nigon, P. Muralt, T. Mikolajick, and U. Schroeder 'Domain Pinning: Comparison of Hafnia and PZT Based Ferroelectrics' *Adv. Electron. Mater.,* vol. 3, no. 4, p. 1600505, 2017.
J35	S. Starschich, T. Schenk, U. Schroeder, and U. Boettger 'Ferroelectric and piezoelectric properties of $Hf_{1-x}Zr_xO_2$ and pure ZrO_2 films' *Applied Physics Letters,* vol. 110, no. 18, p. 182905, 2017.
J36	S. Knebel, D. Zhou, U. Schroeder, S. Slesazeck, M. Pešić, R. Agaiby, J. Heitmann, and T. Mikolajick 'Reliability Comparison of ZrO_2-Based DRAM High-k Dielectrics Under DC and AC Stress' *IEEE Transactions on Device and Materials Reliability*, vol. 17, no. 2, pp. 324–330, 2017.
J37	M. H. Park, T. Schenk, M. Hoffmann, S. Knebel, J. Gärtner, T. Mikolajick, and U. Schroeder 'Effect of acceptor doping on phase transitions of HfO_2 thin films for energy-related applications' *Nano Energy,* vol. 36, no. Supplement C, pp. 381–389, 2017.
J38	T. Mittmann, F. P. G. Fengler, C. Richter, M. H. Park, T. Mikolajick, and U. Schroeder 'Optimizing process conditions for improved $Hf_{1-x}Zr_xO_2$ ferroelectric capacitor performance' *Microelectronic Engineering,* vol. 178, no. C, pp. 48–51, 2017.
J39	Y. H. Lee, H. J. Kim, T. Moon, K. D. Kim, S. D. Hyun, H. W. Park, Y. B. Lee, M. H. Park, and C. S. Hwang 'Preparation and characterization of ferroelectric $Hf_{0.5}Zr_{0.5}O_2$ thin films grown by reactive sputtering' *Nanotechnology*, vol. 28, no. 30, p. 305703, 2017.
J40	F. Zimmermann, F. C. Beyer, G. Gärtner, C. Röder, N. T. Son, E. Janzén, D. Veselá, J. Lorinčík, P. Hofmann, M. Krupinski, T. Mikolajick, F. Habel, G. Leibiger, and J. Heitmann 'Origin of orange color in nominally undoped HVPE GaN crystals' *Optical Materials*, vol. 70, no. C, pp. 127–130, 2017.

J41	R. Materlik, C. Künneth, T. Mikolajick, and A. Kersch 'The impact of charge compensated and uncompensated strontium defects on the stabilization of the ferroelectric phase in HfO_2' *Appl. Phys. Lett.*, vol. 111, no. 8, p. 82902, 2017.
J42	M. Pešić, C. Künneth, M. Hoffmann, H. Mulaosmanovic, S. Müller, E. T. Breyer, U. Schroeder, A. Kersch, T. Mikolajick, and S. Slesazeck 'A computational study of hafnia-based ferroelectric memories: from ab initio via physical modeling to circuit models of ferroelectric device' *J Comput Electron*, vol. 16, pp. 1236–1256, 2017.
J43	M. Pešić, C. Künneth, M. Hoffmann, H. Mulaosmanovic, S. Müller, E. T. Breyer, U. Schroeder, A. Kersch, T. Mikolajick, and S. Slesazeck 'A computational study of hafnia-based ferroelectric memories: from ab initio via physical modeling to circuit models of ferroelectric device' *J Comput Electron*, vol. 4, pp. 1–21, 2017.
J44	K. D. Kim, Y. H. Lee, T. Gwon, Y. J. Kim, H. J. Kim, T. Moon, S. D. Hyun, H. W. Park, M. H. Park, and C. S. Hwang, 'Scale-up and optimization of HfO_2-ZrO_2 solid solution thin films for the electrostatic supercapacitors' *Nano Energy*, vol. 39, pp. 390–399, 2017.
J45	M. Simon, A. Heinzig, J. Trommer, T. Baldauf, T. Mikolajick, and W. M. Weber 'Top-Down Technology for Reconfigurable Nanowire FETs With Symmetric On-Currents' *IEEE Transactions on Nanotechnology*, vol. 16, no. 5, pp. 812–819, 2017.
J46	E. D. Grimley, T. Schenk, T. Mikolajick, U. Schroeder, and J. M. LeBeau 'Atomic Structure of Domain and Interphase Boundaries in Ferroelectric HfO_2' *Cond Mat.* 2017.
J47	M. G. Kozodaev, A. G. Chernikova, E. V. Korostylev, M. H. Park, U. Schroeder, C. S. Hwang, and A. M. Markeev 'Ferroelectric properties of lightly doped La:HfO_2 thin films grown by plasma-assisted atomic layer deposition' *Applied Physics Letters*, vol. 111, no. 13, p. 132903, 2017.
J48	M. Hoffmann, T. Schenk, M. Pešić, U. Schroeder, and T. Mikolajick 'Insights into antiferroelectrics from first-order reversal curves' *Appl. Phys. Lett.*, vol. 111, no. 18, p. 182902, 2017.
J49	Yu Jin Kim, Hyeon Woo Park, Seung Dam Hyun, Han Joon Kim, Keum Do Kim, Young Hwan Lee, Taehwan Moon, Min Hyuk Park, and Cheol Seong Hwang, 'Voltage drop in a ferroelectric single layer capacitor by retarded domain nucleation' *Nano Lett.*, vol. 17, pp. 7796-7802, 2017.
J50	DY Jeon, J Zhang, J Trommer, SJ Park, PE Gaillardon, G De Micheli, et al. 'Operation regimes and electrical transport of steep slope Schottky Si-FinFETs', *Journal of Applied Physics,* vol. 121, no. 6, p. 064504, 2017.
J51	S. Banerjee, M. Löffler, U. Muehle, K. Berent, A Heinzig, J. Trommer, et al. 'TEM Study of Schottky Junctions in Reconfigurable Silicon Nanowire Devices' *Advanced Engineering Materials,* vol. 18, no. 2, pp. 180-184, (2017)
J52	M. H. Park, Y. H. Lee, H. J. Kim, Y. J. Kim, T. Mikolajick, U. Schroeder, and C. S. Hwang, 'Understanding the formation of the metastable ferroelectric phase in hafnia-zirconia solid solution thin films', *Nanoscale,* vol. 10, 716-725, 2018.

Conference Proceedings 2016-2017

C1	T. Baldauf, A. Heinzig, T. Mikolajick, W. M. Weber, and J. Trommer 'Strain-engineering for improved tunneling in reconfigurable silicon nanowire transistors' in Proceedings of the *EUROSOI-ULIS,* 2016, pp. 1–4.
C2	F. P. Fengler, M. Pešić, S. Starschich, T. Schneller, U. Böttger, T. Schenk, M. H. Park, T. Mikolajick, and U. Schroeder 'Comparison of hafnia and PZT based ferroelectrics for future non-volatile FRAM applications' in Proceedings of the *46th European Solid-State Device Research Conference (ESSDERC),* 2016, pp. 369–372.
C3	M. Grube, A. Krause, W. M. Weber, T. Mikolajick, S. Dörfler, M. Piwko, T. Jaumann, F. M. Wisser, and U. Langklotz 'Silicon Nanowires: Pushing Energy Storage Capacity in Li Based Battery Systems' in Proceedings of the *ECS Meeting*, 2016, pp. 516–516.
C4	R. Hentschel, A. Wachowiak, A. Großer, A. Jahn, U. Merkel, A. Wille, H. Kalisch, A. Vescan, S. Schmult, and T. Mikolajick 'Pseudo-vertical GaN-based trench gate metal oxide semiconductor field effect transistor' in Proceedings of the *11th International Conference on Advanced Semiconductor Devices & Microsystems (ASDAM),* 2016, pp. 5–8.
C5	T. Mikolajick, H. Wylezich, H. Maehne, and S. Slesazeck 'Versatile resistive switching in niobium oxide' in Proceedings of the *IEEE International Symposium on Circuits and Systems (ISCAS),* 2016, pp. 381–384.
C6	J. Muller, P. Polakowski, S. Muller, H. Mulaosmanovic, J. Ocker, T. Mikolajick, S. Slesazeck, S. Flachowsky, and M. Trentzsch 'High endurance strategies for hafnium oxide based ferroelectric field effect transistor' in Proceedings of the 16th *Non-Volatile Memory Technology Symposium (NVMTS),* 2016, pp. 1–7.
C7	M. Pesic, F. P. Fengler, S. Slesazeck, U. Schroeder, T. Mikolajick, L. Larcher, and A. Padovani 'Root cause of degradation in novel HfO_2-based ferroelectric memories' in Proceedings of the *IEEE International Reliability Physics Symposium (IRPS),* , 2016, p. MY–3.
C8	U. Schroeder, M. Pešic, T. Schenk, H. Mulaosmanovic, S. Slesazeck, J. Ocker, C. Richter, E. Yurchuk, K. Khullar, J. Müller, et al. 'Impact of field cycling on HfO_2 based non-volatile memory devices' in Proceedings of the *46th European Solid-State Device Research Conference (ESSDERC),* 2016, pp. 364–368.
C9	V. Sessi, F. Seichepine, S. Pregl, N. Szabo, A. Hierlemann, T. Mikolajick, W. M. Weber, and U. Frey 'Integrating Bottom-Up Grown Silicon Nanowires on a CMOS Chip to Realize High-Density Transistor Arrays for Chemical Sensing' in *Proceedings of the 20th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS 2016)*, 2016, pp. 1118–1119 ISBN: 978-0-9798064-9-0.
C10	M. Simon, A. Heinzig, J. Trommer, T. Baldauf, T. Mikolajick, and W. M. Weber 'Bringing reconfigurable nanowire FETs to a logic circuits compatible process platform' in *IEEE Nanotechnology Materials and Devices Conference (NMDC)*, 2016, pp. 1–3.
C11	S. Slesazeck, M. Herzig, T. Mikolajick, A. Ascoli, M. Weiher, and R. Tetzlaff 'Analysis of V th variability in NbO_x-based threshold switches' in Proceedings of the *16th Non-Volatile Memory Technology Symposium (NVMTS),* 2016, pp. 1–5.
C12	M. Tallarida, T. Schenk, C. Mariani, L. Simonelli, C. Richter, and U. Schroeder 'Investigation of Si-doped HfO2 ALD films by means of EXAFS and XANES' in Proceedings of the LD workshop proceedings, Barcelona, 2016.
C13	J. Trommer, A. Heinzig, T. Baldauf, T. Mikolajick, W. M. Weber, M. Raitza, and M. Völp 'Reconfigurable nanowire transistors with multiple independent gates for efficient and programmable combinational circuits' in Proceedings of the 2016 Conference on Design, Automation & Test in Europe, 2016, pp. 169–174.
C14	M. Pesic, S. Knebel, M. Hoffmann, C. Richter, T. Mikolajick, and U. Schroeder 'How to make DRAM non-volatile? Anti-ferroelectrics: A new paradigm for universal memories' in Proceedings of the *IEEE International Electron Devices Meeting (IEDM)*, 2016, p. 11.6.1-11.6.4.
C15	M. Trentzsch, S. Flachowsky, R. Richter, J. Paul, B. Reimer, D. Utess, S. Jansen, H. Mulaosmanovic, S. Müller, S. Slesazeck, J. Ocker, M. Noack, J. Müller, P. Polakowski, J. Schreiter, S. Beyer, T. Mikolajick, and B. Rice 'A 28nm HKMG super low power embedded NVM technology based on ferroelectric FETs' in Proceedings of the *IEEE International Electron Devices Meeting (IEDM)*, 2016, p. 11.5.1-11.5.4.
C16	J. M. LeBeau, E. D. Grimley, T. Schenk, X. Sang, and U. Schroeder 'Uncovering the atomic scale origins of functionality in oxide nano composites via scanning transmission electron microscopy' in Proceedings of the Electronic Materials and Applications EMA, 2017.
C17	S. Slesazeck, H. Wylezich, and T. Mikolajick, 'Analog memristive and memcapacitive properties of Ti / Al_2O_3 / Nb_2O_5 / Ti resistive switches' in Proceedings of the *IEEE 8th Latin American Symposium on Circuits Systems (LASCAS)*, 2017, pp. 1–4.
C18	M. Raitza, A. Kumar, M. Völp, D. Walter, J. Trommer, T. Mikolajick, and W. M. Weber 'Exploiting transistor-level reconfiguration to optimize combinational circuits' in Proceedings of the *Design, Automation Test in Europe Conference Exhibition (DATE),* 2017, pp. 338–343.

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C19	M. Hoffmann, M. Pešić, S. Slesazeck, U. Schroeder, T. Mikolajick, and T. Mikolajick 'Modeling and design considerations for negative capacitance field-effect transistors' in Proceedings of the *Joint International EUROSOI Workshop and International Conference on Ultimate Integration on Silicon (EUROSOI-ULIS)*, 2017, pp. 1–4.
C20	H. Mulaosmanovic, J. Ocker, S. Müller, M. Noack, J. Müller, P. Polakowski, T. Mikolajick, and S. Slesazeck 'Novel ferroelectric FET based synapse for neuromorphic systems' in Proceedings of the Symposium on VLSI Technology, 2017, pp. T176–T177.
C21	J. Trommer, A. Heinzig, S. Slesazeck, U. Mühle, M. Löffler, D. Walter, C. Mayr, T. Mikolajick, and W. M. Weber 'Reconfigurable germanium transistors with low source-drain leakage for secure and energy-efficient doping-free complementary circuits' in Proceedings of the *75th Annual Device Research Conference (DRC)*, 2017, pp. 107-108
C22	D. Y. Jeon, T. Baldau, S. J. Park, S. Pregi, L. Baraban, G. Cuniberti, T. Mikolajick, and W. M. Weber 'In-depth electrical characterization of carrier transport in ambipolar Si-NW Schottky-barrier FETs' in Proceedings of the *47th European Solid-State Device Research Conference (ESSDERC)*, 2017, pp. 304–307.
C23	M. Pesic, M. Hoffmann, C. Richter, S. Slesazeck, T. Kämpfe, L. M. Eng, T. Mikolajick, and U. Schroeder 'Anti-ferroelectric ZrO_2, an enabler for low power non-volatile 1T-1C and 1T random access memories' in Proceedings of the *47th European Solid-State Device Research Conference (ESSDERC)*, 2017, pp. 160–163.
C24	J. Radhakrishnan, S. Slesazeck, H. Wylezich, T. Mikolajick, A. Ascoli, and R. Tetzlaff 'A physics-based Spice model for the Nb_2O_5 threshold switching memristor' in Proceedings of the *5th International Workshop on Cellular Nanoscale Networks and their Applications (CNNA)*, 2016, pp. 1-2.
C25	E. T. Breyer, H. Mulaosmanovic, T. Mikolajick, and S. Slesazeck 'Reconfigurable NAND/NOR logic gates in 28 nm HKMG and 22 nm FD-SOI FeFET technology' in Proceedings of the IEEE International Electron Devices Meeting (IEDM), 2017, p. 28.5.1-28.5.4.
C26	S. Dünkel, M. Trentzsch, R. Richter, P. Moll, C. Fuchs, O. Gehring, M. Majer, S. Wittek, B. Müller, T. Melde, H. Mulaosmanovic, S. Slesazeck, S. Müller, J. Ocker, M. Noack, D. -A. Löhr, P. Polakowski, J. Müller, T. Mikolajick, J. Höntschel, B. Rice, J. Pellerin, S. Beyer 'A FeFET based super-low-power ultra-fast embedded NVM technology for 22nm FDSOI and beyond' in Proceedings of the IEEE International Electron Devices Meeting (IEDM), 2017, p. 19.7.1 - 19.7.4.
C27	I. Dirnstorfer, T. Chohan, P. M. Jordan, M. Knaut, D. K. Simon, J. W. Bartha, T. Mikolajick 'Al_2O_3-TiO_2 Nanolaminates for Conductive Silicon Surface Passivation" In IEEE Journal of Photovoltaics 6, Nr. 1, 2016, 86–91.

Monographs (Book Chapters) 2016-2017

M1	„Dielectric Nanomaterials for Silicon Solar Cells" by I. Dirnstorfer and T. Mikolajick, in Li, Quan, (2016), *Nanomaterials for Sustainable Energy*, Cham (Switzerland), *Springer International Publishing.*
M2	„Nonvolatile Field-Effect Transistors Using Ferroelectric Doped Hf02 Films" by U. Schroeder, S. Slesazeck and T. Mikolajick, in B.-E. Park, H. Ishiwara, M. Okuyama, S. Sakai, S.-M. Yoon, (2016), *Ferroelectric-Gate Field Effect Transistor Memories,* Dordrecht (Netherlands), *Springer Netherlands.*
M3	"Materials for DRAM Memory Cell Applications" by U. Schroeder, K. Cho, and S. Slesazeck, in V. Naravanan, M. M. Frank, A. A. Demkov, (2016), *Materials and Energy, Vol. 8*, Singapore (Singapore), *World Scientific Publishing Co. Pte. Ltd..*

Invited Talks 2016-2017

I1	F. Schubert *'Molecular Beam Epitaxy of ultra-pure AlGaN/GaN heterostructures'* presented at the EMN Meeting on Epitaxy, Budapest, Hungary, 2016.
I2	U. Schroeder, M. Pesic, T. Schenk, H. Mulaosmanovic, S. Slesazeck, J. Ocker, S. Müller, C. Richter, S. Flachowsky, J. Müller, P. Polakowski, X. Sang, J. LeBeau, S. Jansen, S. Kolodinski, R. van Bentum, A. Kersch, C. Künneth, T. Mikolajick 'Impact of field cycling on HfO2 based non-volatile memory devices' presented at the ESSDERC, Lausanne, Switzerland, 2016.
I3	U. Schroeder, T. Schenk, M. Hoffmann, C. Richter, M. Pešić, F. Fengler, S. Slesazeck, R. Materlik, C. Künneth, A. Kersch, X. Sang, J. M. LeBeau, S. Kalinin, and T. Mikolajick 'Ferroelectric HfO_2 for Non-Volatile Memory Devices' presented at the CIMTEC, Perugia, Italy, 2016.
I4	H. Mulaosmanovic, M. Pešić, T. Schenk, S. Slesazeck, J. Ocker, C. Richter, E. Yurchuk, J. Müller, P. Polakowski, E. D. Grimley, J. M. LeBeau, S. Flachowsky, S. Jansen, S. Kolodinski, R. van Bentum, A. Kersch, C. Künneth, N. Wisinger, S. Kalinin, T. Mikolajick, U. Schroeder *'HfO_2 and ZrO_2 based ferroelectric materials for non-volatile memory applications'* presented at the BeLux2/IMEC, Leuven, Belgium, 2016.
I5	W. M. Weber, A. Heinzig, J. Trommer, T. Baldauf, M. Raitza, M. Grube, S. Pregl, D.-Y. Jeon, S.-J. Park, V. Sessi, et al. 'High-Yield Reconfigurable Silicon and Germanium Nanowire Transistors and Compact Logic Circuits' presented at the ECS Meeting, 2016
I6	U. Schroeder, T. Schenk, M. Hoffmann, C. Richter, M. Pesic, F. Fengler, S. Slesazeck, S. Kalinin, A. Kersch, J. L. Jones, J. LeBeau , T. Mikolajick *'Ferroelectric HfO_2 or ZrO_2 for Non-Volatile Memory Devices'* presented at the MRS Spring, Phoenix, USA, 2017.
I7	T. Mikolajick 'Basics, History and conventional FeRAM' presented at the IMW, Monterey, USA, 2017.
I8	U. Schroeder *'Ferroelectric HfO_2: Basics, material properties and optimization'* presented at the IMW, Monterey, USA, 2017.
I9	U. Schroeder *'HfO_2 based FeRAM and NVDRAM'* presented at the IMW, Monterey, USA, 2017.
I10	T. Mikolajick *'1T FeFET Memory and an outlook to NCFET'* presented at the IMW, Monterey, USA, 2017.
I11	M. Pešić, S. Slesazeck, T. Mikolajick, U. Schroeder *'Anti-ferroelectric ZrO_2 Non-volatile Memory'* presented at the NVMTS, Aachen, Germany, 2017.
I12	M. Pešić, S. Slesazeck, T. Mikolajick, U. Schroeder *'Inducing the non-volatility within the state-of-the-art DRAM'* presented at the NVMTS Aachen, Germany, 2017.
I13	M.Pešić, E.Yurchuk, U. Schroeder, T. Mikolajick and S. Slesazeck *'Reliability Aspects of Novel Anti-ferroelectric Non-volatile Memories compared to Hafnia based Ferroelectric Memories'* presented at the IIRW, CA, USA, 2017.
I14	U. Schroeder *'Increasing interest in HfO_2 and ZrO_2 based semiconductor devices: from DRAM to negative capacitance FETs'* presented at the ALD Russia, St. Peterburg, Russia, 2017.
I15	T. Schenk, M. H. Park, M. Pešić, M. Hoffmann, C. Richter, S. Mueller, H. Mulaosmanovic, F. P. G. Fengler, S. Slesazeck, T. Mikolajick, U. Schroeder *'10 Years Fluorite-type Ferroelectrics – A Survey'* presented at the Towards Oxide-based Electronics (TO-BE) Spring Meeting, Luxembourg, 2017.
I16	T. Schenk, A. Anspoks, I. Jonane, R. Ignatans, B. S. Johnson, J. L. Jones, M. Tallarida, C. Richter, T. Mikolajick, U. Schroeder *'Structural Studies of HfO_2 Poly-morphs by EXAFS and XANES'* presented at the E-MRS Fall Meeting, Warsaw, 2017.
I17	M. H. Park and C. S. Hwang *'Phase Transition and Related Energy Applications of (Hf, Zr)O_2 Films'* presented at the ECS spring meeting, New Orleans, USA, 2017.
I18	M. H. Park and C. S. Hwang *'Ferroelectric fluorite structured oxides: Materials fundamentals, switching, wake- up, and applications in electronics and energy'* presented at the IEEE SISC, San Diego, USA, 2018.
I19	S. Slesazeck *'The negative aspects at the origin of hysteresis effects in FeFETs and niobium threshold switches'* presented at the IWCMM, Milano, Italy, 2016.
I20	S. Slesazeck, M. Herzig, T. Mikolajick, A. Ascoli, M. Weiher, and R. Tetzlaff *'Analysis of V_{th} variability in NbO_x-based threshold switches'* presented at the NVMTS, Pittsburgh, USA, 2016.

Education

PhD thesis

T1	F. Schubert "Plasmaunterstützte Molekularstrahlepitaxie von AlGaN/GaN-Heterostrukturen – Substrateinfluss auf die strukturellen, optischen und elektrischen Eigenschaften epitaktisch gewachsener Strukturen", PhD thesis (2016)
T2	H. Wylezich "Integration und Charakterisierung resistiv schaltbarer Speichermatrizen", PhD thesis (2016)
T3	D. K. Simon "Realization and Characterization of Advanced Nanolayers for Photovoltaic Applications", PhD thesis (2016)
T4	P. Jordan "Elektrische Charakterisierung passivierender Grenzflächen für Silizium Solarzellen", PhD thesis (2016)
T5	T. Schenk "Formation of Ferroelectricity in Hafnium Oxide Bades Thin Films", PhD thesis (2016)
T6	S. Döring "Scanning Spreading Resistande Microscopy and ist Application to Passive and Active Semiconductor Device Characterization", PhD thesis (2017)
T7	A. Winzer "Hoch-Epsilonmaterialien in Galliumnitrid elektronischen Bauelementen", PhD thesis (2017)
T8	J. Trommer "Towards Reconfigurable Electronics by Functional-Enhanced Circuits and Germanium Nanowire Devices", PhD thesis (2017)
T9	M. Pesic „Gate Stack Engineering for Emerging Polarization Based Non-Volatile Memories", PhD thesis (2017)
T10	M. Schuster “Design und Entwicklung einer HEMT Technologie für Leistungsbauelemente zur Charakterisierung von epitaktisch gewachsenem Galliumnitrid auf 150mm Siliziumwafern“, PhD thesis (2017)
T11	C. Eichenseer "Application of External Physical or Electrical Stimulations in Integrated Circuit Testing", PhD thesis (2017)