

## Institute of Microelectronics

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## Prof. Dr.-Ing. Maurits Ortmanns

Maurits Ortmanns received the Dipl.-Ing. in electrical engineering from the Saarland University, Saarbruecken, Germany, in 1999 and the Dr.-Ing.degree from the Albert-Ludwigs-University, Freiburg, Germany, in 2004, both with highest honors.

In 1997 and 1998, he was with the Research Center Karlsruhe, Germany, and with EXAR, Inc., Fremont, CA, as an engineering intern working in the field of Microsensors. In 1999, he joined the Institute of Microelectronics at the Saarland University, where he was working as are search assistant. In 2001, he moved to the Institute of Microsystem

## Director of Institute



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Technology, Albert-Ludwigs-University, where he was working toward the Ph.D. degree in the field of continuous-time sigma-delta modulator design until 2004.

From 2004 - 2005, he has been with sci-worx GmbH, Hannover, Germany, where he was working in the field of mixed-signal and analog circuits for biomedical implants, low-voltage, low-power applications, and high-speed circuits. In the beginning of 2006, Dr. Ortmanns joined the HSG-IMIT, Villingen-Schwenningen, Germany, and was additionally a guest lecturer at the University of Freiburg, Germany. In May 2006, he was appointed a Juniorprofessorship for Integrated Interface Circuits at the Institute for Microsystems Engineering in Freiburg.

Since May 2008, Prof. Ortmanns is full professor at the Faculty of Electrical Engineering and Computer Science at the University of Ulm, where he heads the Institute of Microelectronics.

Prof. Ortmanns received the VDI and the VDE award for his Master studies in electrical engineering from the Saarland University in 1999, the ITG Publication Award 2015, and the Best Student Paper Awards at MWSCAS 2009 and at SampTA 2011. He also received the faculty's teaching award 2012 and 2015.

He served as program committee member of the European Solid State Circuits Conference (ESSCirC), the Design Automation and Test Conference (DATE) and the European Conference on Circuit Theory and Design (ECCTD), Associate Editor of the IEEE Transactions of Circuits and Systems I, Guest Editor of the IEEE Journal Solid State Circuits, and is currently Associate Editor of the IEEE Transactions of Circuits and Systems II. Prof. Ortmanns is a Technical Program Committee member of the IEEE International Solid-State Circuits Conference (ISSCC) since 2012, an Executive Committee member of ISSCC since 2013 and European TPC Chair of ISSCC 2015. He holds a dozen patents, is author of the book "Continuous-Time Sigma-Delta A/D Conversion", and published several other book chapters

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## Consultation hours

By arrangement.

## Teaching

## Publications

and more than 190 IEEE journal and conference papers.

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# Publications - Prof. Dr.-Ing. M. Ortmanns

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## Article

273. Pagin, M.; Ortmanns, M.  
*A Neural Data Lossless Compression Scheme Based on Spatial and Temporal Prediction*  
2017 IEEE Biomedical Circuits and Systems Conference (BioCAS), Torino, Italy,  
October 2017
272. Djekic, D.; Fantner, G.; Behrends, J.; Lips, K.; Ortmanns, M.; Anders, J.  
*A Transimpedance Amplifier Using a Widely Tunable PVT-Independent Pseudo-Resistor for High-Performance Current Sensing Applications*  
43rd European Solid State Circuits Conference (ESSCIRC), Leuven, Belgium,  
September 2017
271. Djekic, D.; Lips, K.; Behrends, J.; Fantner, G.; Ortmanns, M.; Anders, J.

*Linearisierter, Temperatur- und Prozess-unabhängiger*

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 Transimpedanzverstärker für hochsensitive Stromausleseschaltungen

Kleinheubacher Tagung, Miltenberg, Germany,

September 2017

270. Anders, J.; Chu, A.; Handwerker, J.; Schlecker, B.; Ortmanns, M.; Künstner, S.; Möser, J.; Lips, K.  
*Energy-based modeling of CMOS voltage-controlled oscillators for continuous-wave- and rapid scan ESR experiments*  
 59th Rocky Mountain Conference on Magnetic Resonance, Quebec, Canada, July 2017
269. Haas, M.; Schweizer, B.; Anders, J.; Ortmanns, M.  
*A miniaturized UWB antenna for implantable data telemetry*  
 International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) 2017, Jeju, Korea, July 2017
268. Pagin, M.; Ortmanns, M.  
*Evaluation of Logarithmic vs. Linear ADCs for Neural Signal Acquisition and Reconstruction*  
 39th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC'17), Jeju Island, South Korea, July 2017
267. Al Marashli, A.; Anders, J.; Becker, J.; Ortmanns, M.  
*A 107 dB SFDR, 80 kS/s Nyquist-rate SAR ADC using a hybrid capacitive and incremental  $\Sigma\Delta$  DAC*  
 2017 Symposium on VLSI Circuits (VLSI Circuits), Kyoto, Japan, June 2017
266. Pagin, M.; Becker, J.; Ortmanns, M.  
*Evaluation of Spike Sorting and Compression for Digitally Reconfigurable Non-Uniform Quantization*  
 IEEE 15th International NEWCAS Conference, Strasbourg, France, June 2017
265. Wagner, J.; Chi, J.; Ortmanns, M.  
*Designing CT Bandpass Sigma-Delta Modulators with Arbitrary STF Shapes*  
 IEEE International Symposium on Circuits and Systems (ISCAS 2017), Baltimore, USA, May 2017
264. Chi, J.; Wagner, J.; Anders, J.; Ortmanns, M.

*Digital Interferer Suppression and Jitter Reduction in Continuous-Time Bandpass Sigma Delta Modulators*

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IEEE International Symposium on Circuits and Systems (ISCAS 2017), Baltimore, USA,  
May 2017

263. Handwerker, J.; Perez-Rodas, M.; Ortmanns, M.; Scheffler, K.; Anders, J.  
*Towards CMOS-based In-vivo NMR Spectroscopy and Microscopy*  
IEEE International Symposium on Circuits and Systems (ISCAS 2017), Baltimore, USA,  
May 2017
262. Wagner, J.; Chi, J.; Ortmanns, M.  
*Designing CT  $\Sigma\Delta$  Modulators with Shaped Feedback Waveforms using [www.sigma-delta.de](http://www.sigma-delta.de)*  
23rd IEEE International Conference on Electronics, Circuits and Systems (ICECS), Monaco,  
December 2016
261. Wagner, J.; Reich, S.; Ritter, R.; Anders, J.; Ortmanns, M.  
*Finite GBW in Single OpAmp CT  $\Sigma\Delta$  Modulators*  
23rd IEEE International Conference on Electronics, Circuits and Systems (ICECS), Monaco,  
December 2016
260. Herkle, A.; Schuster, M.; Becker, J.; Ortmanns, M.  
*Enhanced Arbiter PUFs using custom sized structures for reduced noise sensitivity*  
23rd IEEE International Conference on Electronics, Circuits and Systems (ICECS), Monaco,  
December 2016
259. Becker, J.; Anders, J.; Ortmanns, M.  
*A Continuous-Time Field Programmable Analog Array with 1 GHz GBW*  
23rd IEEE International Conference on Electronics, Circuits and Systems (ICECS), Monaco,  
December 2016
258. Chi, J.; Ritter, R.; Wagner, J.; Ortmanns, M.  
*Phase Noise vs. Jitter Analysis in Continuous-Time LP and BP Sigma Delta Modulators with Interferers*  
23rd IEEE International Conference on Electronics, Circuits and Systems (ICECS), Monaco,  
December 2016