

## List of publications (until 9/2016)

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### Journals (peer-reviewed)

- [1] V. Michal, "Switched-mode Active Decoupling Capacitor allowing Volume Reduction of the High voltage DC Filters," IEEE Transactions on Power Electronics, (2015).
- [2] V. Michal, "Three-level PWM Floating H-bridge Sinewave Power Inverter for High-voltage and High efficiency Applications," IEEE Transactions on Power Electronics, (2015).
- [3] V. Michal, "Absolute Value, 1% Linear and Lossless Current-Sensing Circuit for the Step-Down DC-DC Converters With Integrated Power Stage," IEEE Journal of Solid-State Circuits, Vol. 49, Issue 5 (2014).
- [4] V. Michal, "Front-end  $\Delta C/C_0$  capacitive interface based on negative impedance converter," IET Electronics Letters, Vol. 50, Issue 23 (2014).
- [5] V. Michal, "Peak-Efficiency Detection and Peak-Efficiency Tracking Algorithm for Switched-Mode DC-DC Power Converters," IEEE Transactions on Power Electronics, Vol. 29, Issue 12, (2014).
- [6] V. Michal, "Inductor Current Zero-Crossing Detector and CCM/DCM Boundary Detector for Integrated High-Current Switched-Mode DC-DC Converters," IEEE Transactions on Power Electronics Vol. 29, Issue 10, (2014).
- [7] V. Michal, "Modulated Ramp PWM Generator for Linear Control of Boost Converter's Power Stage," IEEE Transactions on Power Electronics, Vol. 27, Issue 6. pp. 2958 – 2965 (2012).
- [8] V. Michal, J. Sedlacek. "Low-pass biquadratic filters with high suppression rate," IET Electronics Letters, Vol. 45, Issue 12, p. 591-593 (2009).
- [9] V. Michal et al. "Fixed-gain CMOS differential amplifiers with no external feedback for a wide temperature range," Cryogenic, Vol. 49, Issue 11 (2009).
- [10] M. Aurino, E. Baggetta, S. Bouat, V. Michal, D. Renaud, C. Bornier, M. Laine, J.C. Villegier, "Cryogenic Test-bed Applied to 9K NbN RSFQ Devices Operation," IEEE Transaction on Applied Superconductivity, Issue 99 (2010).

### Conferences and workshops

- [11] **Invited paper:** V. Michal, D. Cottin, P. Arno, "Boost DC/DC Converter Nonlinearity and RHP-Zero: Survey of the Control-to-Output Transfer Function Linearization Methods," *IEEE conference Applied Electronic*, Pilsen 2016, Czech Republic.
- [12] V. Michal, "Dynamic Duty-cycle Limitation of the Boost DC/DC Converter allowing Maximal Output Power Operations," *IEEE conference Applied Electronic*, Pilsen 2016, Czech Republic.
- [13] V. Michal, D. Chesneau, "Time Domain CCM/DCM Boundary Detector with Zero Static Power Consumption for Integrated High-Efficiency Step-down DC/DC Converters," *IEEE conference Applied Electronic*, Pilsen 2016, Czech Republic.
- [14] V. Michal, D. Cottin, N. Marty, P. Arno, "Dual-phase 18V 280 $\mu$ A charge pump with active switches and passive level shifter for low-voltage high-density capacitors," 2015 IEEE 13<sup>th</sup> International New Circuits and Systems Conference (NEWCAS), Grenoble-France.

- [15] V. Michal, "On the low-power design, stability improvement and frequency estimation of the CMOS ring oscillator," Proceeding of IEEE int. conference Radioelektronika 2012, Brno – Czech Republic.
- [16] V. Michal, C. Premont, G. Pillonnet, N. Abouchi, "Current-Mirror Based PID Controller," Proceeding of IEEE int. conference NEWCAS 2011 – Bordeaux, France.
- [17] **Invited paper:** V. Michal, E. Baggetta, M. Aurino, S. Bouat, J-C Villegier, "Superconducting RSFQ Logic: Towards 100GHz Digital Electronics" Proceeding of IEEE conf. Radio 2011, Brno – Czech Republic.
- [18] V. Michal, C. Premont, G. Pillonnet, N. Abouchi, "Single Active Element PID Controllers," Proceeding of IEEE conf. Radio 2010, Brno – Czech Republic.
- [19] V. Michal, C. Premont, G. Pillonnet, N. Abouchi, "Zero-derivative Method of Analog Controller Design Applied to Step-down DC-DC Converters," Proceeding of IEEE int. conference ISCAS 2010 – Paris, France.
- [20] V. Michal, G. Klisnick, G. Sou, M. Redon, J. Sedláček, "Current Conveyor with Very Low Output Impedance Voltage Buffer for Laboratory Instrumentation" Proceeding of IEEE int. conference ISCAS 2010 – Paris, France.
- [21] V. Michal, J. Sedláček, K. Hájek, "Low-Pass Cascade Filters with High Attenuation Rate in the Stopband," Proceeding of the IEEE int. Conference Radioelek (2009).
- [22] V. Michal, S. Bouat, J-C Villegier, J. Sedláček, "Superconducting NbN Band-Pass Filter and Matching Circuit for 30GHz RSFQ Data Converter," Proceeding of the IEEE int. Conference Radioelek (2009).
- [23] V. Michal, A. Kreisler, A. Degardin, G. Klisnick, G. Sou, M. Redon, "Fixed-gain CMOS Differential Amplifiers for the 40 K to 390 K Temperature Range". Proceeding of 8<sup>th</sup> European Workshop on Low Temperature Electronics (WOLTE 8), Ilmenau, Allemagne (23-26 June 2008), oral presentation.
- [24] V. Michal, S. Bouat and J.C. Villegier, "Design of NbN Superconducting Band Pass Filters at 30 GHz for High Speed RSFQ Data converter," International Workshop on Teleinformatics and Electromagnetic Field TIEF 2008 8. - 12. 9. 2008 Paris, ISBN 978-80-214-3718-0.
- [25] V. Michal "New approaches of read-out electronics for superconducting single photon detectors," 1<sup>st</sup> Karlsruhe Detector Workshop, S-Pulse project, oral presentation (May 2008).
- [26] A. Kreisler, M. Longhin, V. Michal, M. Aurino, V. Jagtap, I. Türer, X. Gaztelu, A. Scheuring & A.F. Dégardin, "NANOTIME project: superconducting and semiconducting YBaCuO thin film bolometer investigations for THz imaging arrays," 1<sup>st</sup> Karlsruhe Detector Workshop, S-Pulse project, Invited presentation (May 2008).
- [27] V. Jagtap, M. Longhin, V. Michal, A.F. Degardin, P. Teste, A.J. Kreisler, G. Klisnick, G. Sou, M. Redon, "Semiconducting vs superconducting YBaCuO thin film bolometers: sensitivity and crosstalk investigations for future far-infrared imagers", Invited Poster, Applied Superconductivity Conference (ASC 08) Chicago, USA.
- [28] E. Baggetta, S. Bouat, V. Michal, J.-C. Villegier, I. D. Renaud, Ch. Bornier, P. Lefevre, R. Guelaz, P. Lumeau "Elaboration of NbN ADC circuits on large area wafers for HyperSCAN", Poster, Applied Superconductivity Conference (ASC 08) Chicago, USA.
- [29] P. Febvre, D. Bouis, V. Michal, R. Setzu, J.-C. Villégier, "Evaluation of self-shunted NbN/TaN/NbN Josephson junctions for digital electronics". Poster, Applied Superconductivity Conference (ASC 08) Chicago, USA.
- [30] R. Setzu, S. Bouat, V. Michal, J.-C. Villegier, I. D. Renaud, "Study of NbN Josephson Junctions with Barrier Tuned to the Metal-Insulator Transition". Poster, Applied Superconductivity Conference (ASC 08) Chicago, USA.

- [31] V. Michal, A. Kreisler, A. Degardin, G. Klisnick, G. Sou, M. Redon, “*Integrated readout electronics for THz bolometric detector characterization*”. Poster, International Workshop on Teleinformatics and Electromagnetic Field TIEF 2007, 1. - 5. 7. 2006 Epita-Paris.
- [32] E. Bagetta, V. Michal, R. Setzu, J-C. Villegier, “*Implementation of a Superconducting High Frequency Divider Circuit with NbN/TaXN/NbN Josephson Junctions*”. Poster, International Workshop on Teleinformatics and Electromagnetic Field TIEF 2007, 1. - 5. 7. 2006 Paris presentation.
- [33] Ch. Péroz, A.F. Dégardin, V. Michal & A.J. Kreisler; J-C. Villegier; G. Beaudin, Y. Delorme & A. Ferret; M. Redon, A. Sentz, G. Klisnick & D. Prele, “*Fabrication and characterization of ultrathin PBCO/YBCO/PBCO constructions for hot electron bolometer terahertz mixing application*” Invited poster, Applied Superconductivity Conference (ASC’06), Seattle, USA (August 2006).
- [34] V. Michal, K. Hájek, J. Sedláček. “*Active filters based on goal-directed lossy RLC prototypes*”. Proceeding of Int. conference on fundamentals of electrotechnics and circuit theory 2006. Gliwice-Ustron: Silesian University of Technology, 2006. s. 393-396. ISBN: 83-85940-28-6.
- [35] V. Michal, K. Hájek, J. Sedláček. “*A simple method of goal-direct lossy synthesis and network optimization*”. Proceeding of Int. conference ELEKTRO 2006, Advances in Electronic and Electrical Engineering, Zilina, Slovakia ISSN: 1804-3119
- [36] V. Michal, K. Hájek, J. Sedláček. “*Active filters based on goal-directed lossy RLC prototypes*”. Proceeding of Int. conference on fundamentals of electrotechnics and circuit theory 2006. Gliwice-Ustron: Silesian University of Technology, 2006. s. 393-396. ISBN: 83-85940-28-6.
- [37] V. Michal, K. Hájek, J. Sedláček, “*Non-ideal performance of active biquadratic filter blocks*”. Proceeding of Int. conference on fundamentals of electrotechnics and circuit theory 2006. Gliwice-Ustron: Silesian University of Technology, 2006. s. 397-400. ISBN: 83-85940-28-6.
- [38] V. Michal, K. Hájek, J. Sedláček, “*Modern operational amplifiers and their degeneracy effects on active filter performance*”. Proceeding of Int. conference on fundamentals of electrotechnics and circuit theory 2006. Gliwice-Ustron: Silesian University of Technology, 2006. s. 505-507. ISBN: 83-85940-28-6.
- [39] K. Hájek, V. Michal, J. Sedláček, “*Real parameters of active filter sections used by non-cascade synthesis*”. In Electronics Devices and Systems IMAPS 06. Brno: VUT Brno FEKT, 2006. s. 85-90. ISBN: 80-214-3246-2.
- [40] K. Hájek, V. Michal, J. Sedláček, “*A non-cascade synthesis of optimized ARC filters*”. Proceeding of International Workshop ISEP - DTEE Brno: VUT Brno, FEKT, 2006. s. 1-4. ISBN: 80-214-3250-0.
- [41] K. Hájek, V. Michal, J. Sedláček, “*Active filter blocks for non-cascade filter synthesis*”. Proceeding of International Workshop ISEP - DTEE. Brno: VUT Brno FEKT, 2006. s. 1-6. ISBN: 80-214-3250-0.
- [42] K. Hájek, V. Michal, J. Sedláček, “*Real properties of two active biquadratic filter sections*”. In Digital Technologies 2005 DT’05. Žilina: EDIS -Žilina university publishers, 2005. s. 44-47. ISBN: 80-8070-486-4.
- [43] K. Hájek, J. Sedláček, V. Michal, “*An interactive control of universal analog filter*”. In AMTEE '05 Seventh International Conference on Advanced Methods in the Theory of Electrical Engineering Applied to Power. Plzeň, 2005. s. 13-18. ISBN: 80-7043-392-2.
- [44] K. Hájek, V. Michal, J. Sedláček, “*A New Integral System of Cascade Frequency Filter Design*”. In IC-SPETO 2005. Gliwice-Ustroň: Institute of theoretical and industrial engineering, 2005. s. 467-470. ISBN: 83-85940-27-8.
- [45] V. Mchal, K. Hájek. J. Sedláček, “*The Analog Filter Design and Interactive Analog Signal*

*Processing by PC Control*". In Application of electrical engineering (AEE 05). Praha: WSEAS, 2005. s. 119-122. ISBN: 960-8457-13-0.

- [46] K. Hájek., J. Sedláček, B. Sviezeny, V. Michal, "*Universal Digitally Controlled Analog Filter*". In Radioelektronika 2003. Brno: 2003. s. 29-32. ISBN: 80-214-2383-8.

### **National workshops and publications**

- [47] V. Michal, M. Klement, K. Vrtěl, "*Snadná výroba popisu předního panelu pro radioamatérské konstrukce*," Praktická Elektronika, PE (2012), ISSN: 1211-328X Czech Republic.
- [48] A. Kreisler, A. Dégardin, M. Longhin, V. Michal, "*Bolomètres supraconducteurs dans le domaine terahertz : une large famille de dispositifs et d'applications*," 3<sup>rd</sup> National Workshop on Superconductivity of the French network SEFIRA (Rustrel, France, 4-6 April 2006), Oral presentation.
- [49] K. Hájek, V. Michal, J. Sedláček, "*An optimization of non-cascade realized active filters using lossy RLC prototypes*". In Electronic Devices and Systems. Brno: VUT Brno, 2006. s. 79-84. ISBN: 80-214-3246-2.
- [50] J. Sedláček, M. Murina, M. Steinbauer, V. Michal, "*Elektrotechnika 2, laboratorní a počítačová cvičení*". BRNO: Ing. Zdeněk Novotný, CSc., Ondráčkova 105, 628 00 Brno, 2006. s. 1-148. ISBN: 80-214-3127-X.
- [51] V. Michal, "*Bezdrátový mikrofon VKV*," Journal Praktická elektronika PE 12/2006, ISSN: 1211-328X.
- [52] M. Steinbauer, M. Murina, V. Michal, J. Sedláček, "*Elektrotechnika 2 - laboratorní cvičení, počítačová cvičení*". Brno: Ing. Zdeněk Novotný, CSc. Ondráčkova 105, 628 00 Brno, 2005. s. 1-152. ISBN: 80-214-2862-7.
- [53] V. Michal, "*Conception of universal digitally controled analog filter*". In Sborník příspěvků konference Radešín 2004. Brno: FEKT VUT BRNO, 2004. s. 89-90. ISBN: 80-214-2726-4.
- [54] V. Michal, "*Mikroprocesorový časovač*," Journal Praktická elektronika PE9/2000, ISSN: 1211-328X.
- [55] V. Michal, "*Automaticky telegrafní klic*" Proceeding of student conference Student EEICT 2002, Brno. Avard for the best presentation.
- [56] V. Michal, "*Modem pro komunikaci po vedení 220V*" Proceeding of student conference Student EEICT 2001, Brno. Avard for the best presentation.
- [57] V. Michal, "*čítač 1.3GHz*," AMA, Journal of Czech Radioclub, 6/1998.