

## Lista lucrarilor publicate ale candidatului

### ONET RAUL-CIPRIAN

#### a) Lista celor mai relevante lucrări

1. **Onet, Raul**; Neag, Marius; Kovacs, Istvan; Topa, Marina Dana; Rodriguez, Saul; Rusu, Ana. Compact Variable Gain Amplifier for a Multistandard WLAN/WiMAX/LTE Receiver. IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS, vol. 61, Issue 1, 2014, pp. 247–257. (**Impact Factor 2.407**).
2. Neag, Marius; **Onet Raul**; Kovacs, Istvan; Martari, Paul. Comparative Analysis of Simulation-Based Methods for Deriving the Phase- and Gain- Margins of Feedback Circuits with OpAmps. IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS, vol. 62, Issue 3, 2015, pp. 625–634. (**Impact Factor 2.407**).
3. **R. Onet**, V. Popescu, M. Neag, M. Topa, and S. McDonagh, “Matlab Modeling and Analysis of the Signal Path in Zero-IF DVB-T / H Radio Receivers,” Electronics and Telecommunications (ISETC), 2010, 9th International Symposium in, 2010, pp. 273-276. (**indexată ISI proceedings**)
4. Chaourani, P., Hellstrom, P. E., Rodriguez, S., **Onet, R.**, Rusu, A. Enabling area efficient RF ICs through monolithic 3D integration. In 2017 Design, Automation & Test in Europe Conference & Exhibition (DATE) (pp. 610-613). IEEE. (**indexată ISI proceedings**)
5. Campanu, I., Salajan, T., **Onet, R.**, Neag, M. Comparative analysis of four second-order OA-RC polyphase filters for an ISM Low-IF receiver. *Semiconductor Conference (CAS), 2012 International. IEEE* (Vol. 2, pp. 385–388).– **Best Paper Award (indexată ISI proceedings)**
6. M. Neag, **R. Onet**, and M. Topa, “A new OTA-C universal biquad resonates out the main parasitic capacitance,” 2009 European Conference on Circuit Theory and Design (ECCTD), Aug. 2009, pp. 125-128. (**indexată ISI proceedings**)
7. Sărăcuț, Ioana; Popescu, Victor; **Onet, Raul**; Neag, Marius; McDonagh, Stephen. “Optimization of the Channel Filter in OFDM Radio Receivers by Using Genetic Algorithms,” Electronics and Telecommunications (ISETC), 2010, 9th International Symposium in, 2010, pp. 43-46. (**indexată ISI proceedings**)
8. Sărăcuț, I., Neag, M., **Onet, R.**, & Kovacs, I. DESIGN OPTIMIZATION OF ANALOG ACTIVE CIRCUITS USING THE GENETIC ALGORITHM. *Acta Technica Napocensis*, vol. 53, 2012, pp. 47–53.
9. M. Neag, **R. Onet**, and M.D. Topa, “Analysing the Stability of Circuits based on Operational Amplifiers by using Frequency-Domain Simulations,” *Acta Technica Napocensis*, vol. 51, 2010, pp. 46-54.



10. **R. Onet**, M. Neag, and M. Topa, "Comparison between three structures of high speed low-voltage and low-dropout linear regulators," 2009 15th International Symposium for Design and Technology of Electronics Packages (SIITME), Sep. 2009, pp. 311-315.

#### **b) Teza de doctorat**

1. **Oneț Raul Ciprian**: "BASEBAND SIGNAL PROCESSING FOR INTEGRATED RADIO RECEIVERS", elaborată sub conducerea prof. dr. ing. Marina Dana ȚOPA

#### **c) Brevete de invenție și titluri de proprietate industrială**

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#### **d) Cărți și capitole în cărți**

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#### **e) Lucrări în reviste indexate ISI**

1. **Onet, Raul**; Neag, Marius; Kovacs, Istvan; Topa, Marina Dana; Rodriguez, Saul; Rusu, Ana. Compact Variable Gain Amplifier for a Multistandard WLAN/WiMAX/LTE Receiver. *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS*, vol. 61, Issue 1, 2014, pp. 247–257. DOI: [10.1109/TCSI.2013.2268324](https://doi.org/10.1109/TCSI.2013.2268324) (**Impact Factor 2.407**).
2. Neag, Marius; **Onet Raul**; Kovacs, Istvan; Martari, Paul. Comparative Analysis of Simulation-Based Methods for Deriving the Phase- and Gain- Margins of Feedback Circuits with OpAmps. *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS*, vol. 62, Issue 3, 2015, pp. 625–634; DOI: [10.1109/TCSI.2014.2370151](https://doi.org/10.1109/TCSI.2014.2370151) (**Impact Factor 2.407**).

#### **f) Lucrări în volumele manifestărilor științifice indexate ISI proceedings**

3. **Oneț, Raul**; Popescu, Victor; Neag, Marius; Sărăcuț, Ioana; Țopa, Marina; McDonagh, Stephen. Matlab Modeling and Analysis of the Signal Path in Zero-IF DVB-T/H Radio Receivers. *Electronics and Telecommunications (ISETC)*, 9th International Symposium in, 2010 IEEE, pp. 273-276. DOI: [10.1109/ISETC.2010.5679314](https://doi.org/10.1109/ISETC.2010.5679314)
4. Chaourani, P., Hellstrom, P. E., Rodriguez, S., **Onet, R.**, & Rusu, A. (2017, March). Enabling area efficient RF ICs through monolithic 3D integration. In 2017 Design, Automation & Test in Europe Conference & Exhibition (DATE) (pp. 610-613). IEEE. DOI: [10.23919/DATE.2017.7927059](https://doi.org/10.23919/DATE.2017.7927059) PROCEEDINGS OF THE 2017 DESIGN, AUTOMATION & TEST IN EUROPE CONFERENCE & EXHIBITION.

5. Neag, Marius; **Onet, Raul**; Topa, Marina. A new OTA-C universal biquad resonates out the main parasitic capacitance. 2009 IEEE European Conference on Circuit Theory and Design (ECCTD), Aug. 2009, pp. 125-128. DOI:[10.1109/ECCTD.2009.5274965](https://doi.org/10.1109/ECCTD.2009.5274965)
6. Campanu, Iulian; Salajan, Tomina; **Onet, Raul**, Neag, Marius. Comparative analysis of four second-order OA-RC polyphase filters for an ISM Low-IF receiver. *Semiconductor Conference (CAS), 2012 International. IEEE* (Vol. 2, pp. 385–388). DOI [10.1109/SMICND.2012.6400753](https://doi.org/10.1109/SMICND.2012.6400753) – Best Paper Award
7. Sărăcuț, Ioana; Popescu, Victor; **Onet, Raul**; Neag, Marius. “Optimization of the Channel Filter in OFDM Radio Receivers by Using Genetic Algorithms,” *Electronics and Telecommunications (ISETC)*, 2010, 9th International Symposium in, 2010, pp. 43-46. DOI: [10.1109/ISETC.2010.5679323](https://doi.org/10.1109/ISETC.2010.5679323)

#### **g) Lucrări în volumele conferințelor indexate în baza de date IEEEExplore**

8. **R.C. Onet**, M. Neag, and M. Topa, “Comparison between three structures of high speed low-voltage and low-dropout linear regulators,” 2009 15th International Symposium for Design and Technology of Electronics Packages (SIITME), Sep. 2009, pp. 311-315. DOI [10.1109/SIITME.2009.5407354](https://doi.org/10.1109/SIITME.2009.5407354)
9. M. Neag, I. Kovacs, **R. Onet**, and M. Topa, “A voltage-controlled amplifier based on Gm cells for multistandard OFDM integrated receivers,” EUROCON-International Conference on Computer as a Tool (EUROCON), 2011 IEEE, p. 1–4. DOI [10.1109/EUROCON.2011.5929293](https://doi.org/10.1109/EUROCON.2011.5929293)
10. M. Neag, **R. Onet**, R. Groza, and M. Topa, “Analysing the stability of series-shunt circuits based on voltage- and current- feedback OpAmps through SPICE AC simulations,” 2010 IEEE International Conference on Automation, Quality and Testing, Robotics (AQTR), IEEE, 2010, pp. 1-5. DOI [10.1109/AQTR.2010.5520813](https://doi.org/10.1109/AQTR.2010.5520813)

#### **h) Lucrări în reviste indexate BDI**

11. Sărăcuț, I., Neag, M., **Onet, R.**, & Kovács, I. DESIGN OPTIMIZATION OF ANALOG ACTIVE CIRCUITS USING THE GENETIC ALGORITHM. *Acta Technica Napocensis*, vol. 53, 2012, pp. 47–53.
12. M. Neag, **R. Onet**, and M.D. Topa, “Analysing the Stability of Circuits based on Operational Amplifiers by using Frequency-Domain Simulations,” *Acta Technica Napocensis*, vol. 51, 2010, pp. 46-54.

13. M. Neag, I. Kovacs, **R. Onet**, and M. Topa, "Novel Voltage-Controlled Amplifiers for Multistandard Integrated Radio Receivers," Acta Tehnica Napocensis Electronics and Telecommunications, vol. 50, 2009, pp. 21-26.
14. B. Kirei, M. Topa, M. Neag, and **R. Onet**, "I/Q Imbalance Compensation Algorithm based on Neural Networks," Journal of Automation Mobile Robotics and Intelligent Systems, vol. 3, 2009, p. 66–71.

#### **i) Lucrări neindexate**

15. **Onet, Raul**, Rusu, Ana. "Energy autonomy analysis of single-channel EEG recording systems". IEEE Life Sciences Conference, LSC 2017, Sydney, Australia, 13-15 December 2017
16. **R. Onet** and M. Neag, "Matlab Modeling of the Main Blocks Within the Analog Signal Path of a DVB-H Radio Receiver," Novice Insights in Electronics, Communications and Information Technology, 2010.
17. I. Kovács, **R. Onet**, and M. Neag, "A Programmable Gain Amplifier With Optimized Frequency Compensation," Novice Insights in Electronics, Communications and Information Technology, vol. 6, 2009, pp. 57-62.
18. M. Neag, **R. Onet**, C. Dan, M. Bodea, G. Dima, L. Goras, N. Cojan, N. Patache, A. Cracan, "ARPIC – An Academic Platform for IC Development", Proceedings of the CDN Live! EMEA 2013 Conference, Munchen, Germania
19. M. Neag, **R. Onet**, A. Rusu, S. Rodriguez, "Cooperation Between Two Members of the Cadence Academic Network – A Case Study", Proceeding of CDN Live! EMEA 2012 Conference, Munchen, Germania
20. M. Neag; I. Kovacs; **R. Onet**; M. Topa, "Systematic Design of OpAmps using Cadence ADE GXL", Proceeding of CDN Live! EMEA 2011 Conference, Munchen, Germania - Winner of the Best Paper Award for the Academic Track

## Citări

### Lucrarea:

**Onet, Raul;** Neag, Marius; Kovacs, Istvan; Topa, Marina; Rodriguez, Saul; Rusu, Ana. Compact Variable Gain Amplifier for a Multistandard WLAN/WiMAX/LTE Receiver. IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS, vol. 61, Issue 1, 2014, pp. 247–257. DOI: [10.1109/TCSI.2013.2268324](https://doi.org/10.1109/TCSI.2013.2268324)

### a fost citată de:

1. Hang Liu, Xi Zhu, Chirn Chye Boon, Xiaofeng He - Cell-Based Variable-Gain Amplifiers With Accurate dB-Linear Characteristic in 0.18  $\mu\text{m}$  CMOS Technology, **IEEE JOURNAL OF SOLID-STATE CIRCUITS**, VOL. 50, NO. 2, FEBRUARY 2015, DOI [10.1109/JSSC.2014.2368132](https://doi.org/10.1109/JSSC.2014.2368132) (**Impact Factor 4.181**)
2. Chang, R. H., Wei, M. F., Chen, H. L., Lin, K. H., Chen, H. M., Gao, Y. Y., & Lin, S. C., "Implementation of a High-Throughput Modified Merge Sort in MIMO Detection Systems", IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS, vol. 61, Issue 9, 2014, pp. 2730–2737; DOI [10.1109/TCSI.2014.2312492](https://doi.org/10.1109/TCSI.2014.2312492). (**Impact Factor 2.407**)
3. Wang, Jingyu, and Zhangming Zhu. "An Improved-Linearity, Single-Stage Variable-Gain Amplifier Using Current Squarer for Wider Gain Range." Circuits, Systems, and Signal Processing (2016): 1-17. DOI [10.1007/s00034-016-0273-z](https://doi.org/10.1007/s00034-016-0273-z) (**Impact Factor 1.694**)
4. Lin, Jun, Yang Zhang, Yujing Yang, Yong Sun, and Tingting Lin. "Anti-saturation system for surface nuclear magnetic resonance in efficient groundwater detection." Review of Scientific Instruments 88, no. 6 (2017). (**Impact Factor 1.616**)
5. Wang, J., Zhu, Z., Liu, S., & Ding, R. (2017). A low-noise programmable gain amplifier with fully balanced differential difference amplifier and class-AB output stage. Microelectronics Journal, 64, 86-91. DOI <https://doi.org/10.1016/j.mejo.2017.04.012> (**Impact Factor 1.163**)
6. Devarajan, N.M.; Chandrasekaran, M. "Design and FPGA implementation of reconfigurable OFDM with improved PAPR" published in OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS, Volume: 9, Issue: 5-6, Pages: 561-566, MAY-JUN 2015. (**Impact Factor 0.47**)
7. Lahiani, S.; Daoud, H.; Ben Selem, S.; Loulou, M. "Design of A Low Power Variable Gain Amplifier For WLAN Standard" in PROCEEDINGS OF 2016 11TH INTERNATIONAL DESIGN & TEST SYMPOSIUM (IDT); Book Series: International Design and Test Symposium; Pages: 227-232; Published: 2016; 11th International Design and Test Symposium (IDT); Hammamet, TUNISIA; DEC 18-20, 2016. (**indexată ISI proceedings**)

8. Sautto, Marco; Quaglia, Fabio; Ricotti, Giulio; Mazzanti, Andrea, "A 420uW 100GHz-GBW CMOS Programmable-Gain Amplifier leveraging the cross-coupled pair regeneration." *2016 IEEE International Solid-State Circuits Conference (ISSCC 2016)*. DOI [10.1109/ISSCC.2016.7417925](https://doi.org/10.1109/ISSCC.2016.7417925) (**indexată ISI proceedings**)
9. Liu, H., Zhu, X., & Boon, C. C. (2015, May). A reconfigurable programmable-gain amplifier with gain step adjustment and binary-weighted power consumption. In *Microwave Symposium (IMS), 2015 IEEE MTT-S International* (pp. 1-4). IEEE. (**indexată ISI proceedings**)
10. Lin, Kuang Hao; Yang, Tai Hsuan; Hsu, Chen Wei, "Implementation of a Low-Power Folded-Cascode RF Front-End for LTE Receivers," *Computer, Consumer and Control (IS3C), 2014 International Symposium on*, vol., no., pp.1049,1052, 10-12 June 2014; DOI: [10.1109/IS3C.2014.274](https://doi.org/10.1109/IS3C.2014.274) (**indexată ISI proceedings**)
11. Vinod, B., Balamurugan, K., Jayakumar, M. (2014, May). Design of CMOS based reconfigurable LNA at millimeter wave frequency using active load. In *Advanced Communication Control and Computing Technologies (ICACCCT), 2014 International Conference on* (pp. 713-718). IEEE. (**indexată ISI proceedings**)
12. Rixon, P. M., & Heimlich, M. (2014, September). Power and latency limitations in secondary spectrum reuse for mobile and home wireless systems. In *Wireless Personal Multimedia Communications (WPMC), 2014 International Symposium on* (pp. 480-485). IEEE. (**indexată ISI proceedings**)
13. Wei, Yu-Lun, Hsiao-Chin Chen, and Chi-Yin Chung. "1.35 GHz programmable gain amplifier for 5G mobile communication." In *Applied System Innovation (ICASI), 2017 International Conference on*, pp. 618-621. IEEE, 2017. DOI: [10.1109/ICASI.2017.7988501](https://doi.org/10.1109/ICASI.2017.7988501)

#### Lucrarea:

Neag, Marius; **Onet Raul**; Kovacs, Istvan; Martari, Paul. Comparative Analysis of Simulation-Based Methods for Deriving the Phase- and Gain- Margins of Feedback Circuits with OpAmps. *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS I-REGULAR PAPERS*, vol. 62, Issue 3, 2015, pp. 625–634; DOI: [10.1109/TCSI.2014.2370151](https://doi.org/10.1109/TCSI.2014.2370151)

#### a fost citată de:

14. SM Anisheh; H Shamsi; M Mirhassani. Positive Feedback Technique and Split-Length Transistors for DC-Gain Enhancement of Two Stage Op-Amps. *IET CIRCUITS DEVICES & SYSTEMS*; Volume: 11, Issue: 6, 2017, Pages: 605-612. DOI: [10.1049/iet-cds.2016.0416](https://doi.org/10.1049/iet-cds.2016.0416) (**Impact Factor 1.092**)
15. Bozomitu, Radu Gabriel, and Neculai Cojan. "A new CMOS differential current-mode AGC on the division operation based." *Microelectronics Journal* 46.11 (2015): 1039-1045; DOI:[10.1016/j.mejo.2015.08.014](https://doi.org/10.1016/j.mejo.2015.08.014) (**Impact Factor 1.163**).

**Lucrarea:**

Sărăcuț, Ioana; Neag, Marius, **Onet, Raul**; Kovács, István. Design Optimization of Analog Active Circuits Using the Genetic Algorithm. Acta Tehnica Napocensis, Electronics and Telecommunications, vol. 53, 2012, pp. 47–53.

**a fost citată de:**

16. Barari, M., Karimi, H. R., & Razaghian, F., “Analog Circuit Design Optimization Based on Evolutionary Algorithms”, Mathematical Problems in Engineering, 2014. DOI: <http://dx.doi.org/10.1155/2014/593684> (**Impact Factor=0.802**).

**Lucrarea:**

**R. Onet**, V. Popescu, M. Neag, M. Țopa, and S. McDonagh. Matlab Modeling and Analysis of the Signal Path in Zero-IF DVB-T/H Radio Receivers. Electronics and Telecommunications (ISETC), 2010, 9th International Symposium in, 2010 IEEE, pp. 273-276. DOI: [10.1109/ISETC.2010.5679314](https://doi.org/10.1109/ISETC.2010.5679314)

**a fost citată de:**

17. Rahman, M., Kamal, N., Reaz, M. B. I., & Hashim, F. H. (2015, April). Dual-mode receiver architecture for Bluetooth and IEEE 802.11b standards. In Computer, Communications, and Control Technology (I4CT), 2015 International Conference on (pp. 117-121). IEEE. (**indexată ISI proceedings**)
18. Karakus, O., Ozen, S. (2012, April). European Terrestrial Digital Television standards performance comparison under AWGN channel. In Signal Processing and Communications Applications Conference (SIU), 2012 20th (pp. 1-4). IEEE.

**Lucrarea:**

M. Neag, **R. Onet**, and M. Topa, “A new OTA-C universal biquad resonates out the main parasitic capacitance,” 2009 European Conference on Circuit Theory and Design (ECCTD), Aug. 2009, pp. 125-128.

**a fost citată de:**

19. Firat KAÇAR, Abdullah YEŞİL, Abbas NOORI, “New CMOS Realization of Voltage Differencing Buffered Amplifier and Its Biquad Filter Applications,” Radioengineering, ISSN 1210-2512, Vol. 21, No. 1, April 2012 (**Impact Factor=0.945**)
20. Alsibai, Z. “Floating-Gate MOSFET Based Tunable Voltage Differencing Transconductance Amplifier and Its Application to Biquad Filters”, International Journal of Engineering Sciences & Research Technology, 2 (4), April, 2013.



# **Lista lucrarilor de laborator redactate și realizate practic**

## **a candidatului ONET RAUL-CIPRIAN**

### **Disciplina “Sisteme cu Circuite Integrate Analogice”**

1. Stabilitatea circuitelor cu reacție realizate cu amplificatoare operaționale
2. Metode de compensare în frecvență a amplificatoarelor operaționale
3. Analiza amplificatoarelor operaționale: limitări și parametri
4. Neidealitățile statice și dinamice ale amplificatoarelor operaționale: efectele acestora în circuite de amplificare și metode de minimizare și compensare
5. Amplificatoare cu câștig controlat implementate cu amplificatoare operaționale sau transconductori
6. Amplificatoare de precizie și de instrumentație: circuite cu mod de lucru în tensiune
7. Amplificatoare de precizie și de instrumentație: circuite cu mod de lucru în curent
8. Filtre analogice active de ordinul I și II implementate în tehnicile AO-RC și Gm-C
9. Referințe și regulatoare liniare de tensiune
10. Aplicații neliniare ale amplificatoarelor operaționale: redresoare de precizie și detectoare de vârf
11. Comparatoare analogice integrate: funcționare, implementare și aplicații
12. Generatoare de semnal
13. Multiplicatoare și divizoare analogice: funcționare, implementare și aplicații
14. Zgomotul în circuite electronice

### **Disciplina “Circuite Analogice de Înaltă Frecvență”**

1. Îmbunătățirea caracteristicilor de frecvență a etajelor de amplificare cu TMOS
2. Analiza și proiectarea sistematică a amplificatoarelor operaționale cu ieșire asimetrică
3. Analiza și proiectarea sistematică a amplificatoarelor operaționale cu ieșiri diferențiale
4. Analiza și proiectarea sistematică a transconductorilor
5. Analiza și proiectarea sistematică a amplificatoarelor cu câștig controlat realizate cu AO sau Gm
6. Analiza și proiectarea sistematică a filtrelor continue în implementări AO-RC și Gm-C
7. Analiza la nivel de sistem a sintetizatoarelor de frecvență bazate pe circuite PLL





## Lista contractelor de cercetare ale candidatului

### ONEȚ RAUL-CIPRIAN

1. 2017: Membru într-un contract de consultanță încheiat de UTCN cu firma Melexis Technologies NV, Belgia  
“Design of the test setup for the AFE1 test chip, characterization of the AFE1 IC and design of an improved version of the AFE1 IC”  
UTC-N Reg.No. 531/07.01.2016
2. 2016 – 2017: Membru într-un proiect de cercetare câștigat prin competiție, finanțat de Vinnova, Suedia  
“Electrical Impedance Spectroscopy ASIC for Skin Cancer Detection”
3. 2015: Membru într-un contract de consultanță încheiat de UTCN cu firma Melexis Technologies NV, Belgia (2015)  
“Design of an Analog Front-End that comprises a Low-Noise Amplifier and a tuned Band-Pass Filter, both fully differential”  
UTC-N Reg.No. 8387/10.04.2015
4. 2014-2016: Implicare în contractul de consultanță încheiat de UTCN cu firma Silansys Semiconductor Ltd., din Republica Irlanda  
“Design of analog blocks for high-temperature applications”  
UTC-N Reg.No. 28318/26.11.2014

