

# LISTĂ DE LUCRĂRI

Şef lucrări dr. ing. Arcadie CRACAN

**Postul:** Conferenţiar universitar, poziţia 8

**Departament:** Bazele Electronicii, Facultatea de Electronică, Telecomunicaţii şi Tehnologia Informaţiei

**Discipline:** Circuite integrate analogice; Testare şi testabilitate

**Domeniul:** Inginerie electronică, telecomunicaţii şi tehnologii informaţionale

## A. Cele mai relevante 10 lucrări

- [1] P. Bonteanu, **A. Cracan**, R. G. Bozomitu, and G. Bonteanu, “A robust pupil detection algorithm based on a new adaptive thresholding procedure,” in Proc. E-Health and Bioengineering Conf. (EHB), Iaşi, Romania, 2019, pp. 1–4. (citări: Google Scholar 21; Web of Science: 9)
- [2] G. Bonteanu and **A. Cracan**, “A high-gain programmable current mirror for large bias currents generation,” in Proc. 5th Int. Symp. Electrical and Electronics Engineering (ISEEE), Galaţi, Romania, 2017, pp. 1–4. (citări: Google Scholar 18; Web of Science: 2)
- [3] D. F. Chipper, **A. Cracan**, and D. Burdia, “A new systolic array algorithm and architecture for the VLSI implementation of IDST based on a pseudo-band correlation structure,” Adv. Electr. Comput. Eng., vol. 17, no. 1, pp. 75–80, 2017. (citări: Google Scholar 17; Web of Science: 7)
- [4] G. Bonteanu, P. Bonteanu, **A. Cracan**, and R. G. Bozomitu, “Implementation of a high-accuracy neural network-based pupil detection system for real-time and real-world applications,” Sensors, vol. 24, no. 8, art. no. 2548, 2024. (citări: Google Scholar 15; Web of Science: 5)
- [5] P. Brînzoi, **A. Cracan**, and N. Cojan, “A new approach in designing electrically controlled capacitance multipliers,” in Proc. Int. Symp. Signals, Circuits and Systems (ISSCS), Iaşi, Romania, 2011, pp. 1–4. (citări: Google Scholar 14; Web of Science: 7)
- [6] **A. Cracan**, G. Bonteanu, and R.-G. Bozomitu, “A weak-inversion CMOS analog multiplier/divider circuit,” in Proc. IEEE 24th Int. Symp. Design and Technology in Electronic Packaging (SIITME), Iaşi, Romania, 2018, pp. 261–264. (citări: Google Scholar 12; Web of Science: 6)
- [7] D. Butnicu, D. O. Neacsu, and **A. Cracan**, “A study of switching frequency impact on reliability of DC–DC PoL converters with discrete transistors,” IEEE Trans. Ind. Appl., vol. 59, no. 5, pp. 6373–6383, Sep./Oct. 2023. (citări: Google Scholar 9; Web of Science: 5)
- [8] N. Cojan, **A. Cracan**, and L. Goraş, “On oscillation based filter testing,” in Proc. 9th Int. Symp. Electronics and Telecommunications (ISETC), Timişoara, Romania, 2010, pp. 85–88. (citări: Google Scholar 7; Web of Science: 0)
- [9] G. Bonteanu and **A. Cracan**, “Enhanced wide range tunable CMOS transconductor for signal processing,” Rom. J. Inf. Sci. Technol. (ROMJIST), vol. 20, no. 4, pp. 313–330, 2017. (citări: Google Scholar 5; Web of Science: 1)
- [10] G. Bonteanu and **A. Cracan**, “A tunable gyrator-capacitor active inductor,” in Proc. IEEE 23rd Int. Symp. Design and Technology in Electronic Packaging (SIITME), Constanţa, Romania, 2017, pp. 122–125. (citări: Google Scholar 2; Web of Science: 5)

## B. Lista completă a lucrărilor publicate

(după profilul Google Scholar; ordonate cronologic, descrescător)

- [1] **A. Cracan** and A. Ciobanașu, "Cmos Voltage-Averaging Feedback Relaxation Oscillator," in Proc. 2025 IEEE 31st International Symposium for Design and Technology in Electronic Packaging (SIITME), pp. 260-264, 2025.
- [2] A. Ciobanașu, I. Cristea, **A. Cracan**, and R. Bozomitu, "A Digital Demodulation-Based Architecture for Offset-Free Chopped Sensor Signal Paths Using Oscillator-Based ADCs," in Proc. 2025 International Semiconductor Conference (CAS), pp. 239-242, 2025.
- [3] A. Ciobanașu, **A. Cracan**, I. Cristea, and R. Bozomitu, "A Highly-Linear, Power-Supply-Isolated Current-Controlled Oscillator for Data Conversion," in Proc. 2025 20th International Conference on PhD Research in Microelectronics and Electronics (PRIME), pp. 1-4, 2025.
- [4] G. Bonteanu, P. Bonteanu, **A. Cracan**, and R. G. Bozomitu, "Implementation of a high-accuracy neural network-based pupil detection system for real-time and real-world applications," Sensors, vol. 24, no. 8, art. no. 2548, 2024.
- [5] A. Ciobanașu, I. Cristea, **A. Cracan**, and R. Bozomitu, "Circuit-Level Linearity Study of Ring Oscillators for VCO-Based ADCs," in Proc. 2024 International Semiconductor Conference (CAS), pp. 221-224, 2024.
- [6] A. Obuhov, I. Nica, and **A. Cracan**, "A Low Offset Ping-Pong Hysteresis Comparator for Magnetic Sensors," in Proc. 2024 International Semiconductor Conference (CAS), pp. 241-244, 2024.
- [7] G. Bonteanu, P. Bonteanu, N. Patache, **A. Cracan**, and R. G. Bozomitu, "Pupil detection system implementation for low-resolution eye images based on a fully-connected neural network classifier," 2024.
- [8] D. F. Chipier and **A. Cracan**, "An efficient algorithm and architecture for the VLSI implementation of integer DCT that allows an efficient incorporation of the hardware security with a low overhead," Applied Sciences, vol. 13, no. 12, art. no. 6927, 2023.
- [9] D. Butnicu, D. O. Neacsu, and **A. Cracan**, "A study of switching frequency impact on reliability of DC-DC PoL converters with discrete transistors," IEEE Transactions on Industry Applications, vol. 59, no. 5, pp. 6373-6383, 2023.
- [10] D. F. Chipier and **A. Cracan**, "An area-efficient unified VLSI architecture for type IV DCT/DST having an efficient hardware security with low overheads," Electronics, vol. 12, no. 21, art. no. 4471, 2023.
- [11] G. Bonteanu, P. Bonteanu, **A. Cracan**, and R. G. Bozomitu, "Implementation of a High Accuracy Pupil Detection Algorithm Using Neural Networks," in Proc. 2023 IEEE 29th International Symposium for Design and Technology in Electronic Packaging (SIITME), pp. 147-150, 2023.
- [12] G. Bonteanu, P. Bonteanu, **A. Cracan**, and R. G. Bozomitu, "A New Hybrid Pupil Detection Algorithm for Real Time Applications," in Proc. International Conference on e-Health and Bioengineering, pp. 368-375, 2023.
- [13] D. F. Chipier and **A. Cracan**, "New Systolic Array Algorithms and VLSI Architectures for 1-D MDST," Sensors, vol. 23, no. 13, art. no. 6220, 2023.
- [14] D. F. Chipier, **A. Cracan**, and V. Andries, "An overview of systolic arrays for forward and inverse discrete sine transforms and their exploitation in view of an improved approach," Electronics, vol. 11, no. 15, art. no. 2416, 2022.



- [15] D. F. Chipper and **A. Cracan**, "A new integer algorithm for a VLSI implementation of DCT using obfuscation technique," in Proc. 2022 14th International Conference on Communications (COMM), pp. 1-4, 2022.
- [16] P. Bonteanu, R. G. Bozomitu, **A. Cracan**, and G. Bonteanu, "A New Pupil Detection Algorithm Based on Multiple Angular Integral Projection Functions," in Proc. 2021 International Conference on e-Health and Bioengineering (EHB), pp. 1-4, 2021.
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- [18] G. Bonteanu, **A. Cracan**, N. I. Alexandru, and S. V. Savinescu, "A comparison between the Gm based implementations of voltage mode and current mode capacitance multipliers," Rom. J. Inf. Sci. Technol. (ROMJIST), vol. 23, no. 2, pp. 204-220, 2020.
- [19] P. Bonteanu, R. G. Bozomitu, **A. Cracan**, and G. Bonteanu, "A Pupil Detection Algorithm Based on Contour Fourier Descriptors Analysis," in Proc. 2020 IEEE 26th International Symposium for Design and Technology in Electronic Packaging (SIITME), pp. 98-101, 2020.
- [20] R. G. Bozomitu, **A. Cracan**, and G. Bonteanu, "VLSI Implementation of 8-PSK/8-QAM/16-QAM Transmitter Circuit in CMOS Technology," in Proc. 2020 43rd International Spring Seminar on Electronics Technology (ISSE), pp. 1-6, 2020.
- [21] P. Bonteanu, **A. Cracan**, R. G. Bozomitu, and G. Bonteanu, "A robust pupil detection algorithm based on a new adaptive thresholding procedure," in Proc. 2019 E-Health and Bioengineering Conference (EHB), pp. 1-4, 2019.
- [22] P. Bonteanu, **A. Cracan**, R. G. Bozomitu, and G. Bonteanu, "A new robust pupil detection algorithm for eye tracking based human-computer interface," in Proc. 2019 International Symposium on Signals, Circuits and Systems (ISSCS), pp. 1-4, 2019.
- [23] G. Bonteanu, **A. Cracan**, and L. Goras, "Gm Based Voltage Mode Capacitance Multiplier," in Proc. 2019 International Semiconductor Conference (CAS), pp. 145-148, 2019.
- [24] P. Bonteanu, R. G. Bozomitu, **A. Cracan**, and G. Bonteanu, "A new pupil detection algorithm based on circular hough transform approaches," in Proc. 2019 IEEE 25th International Symposium for Design and Technology in Electronic Packaging (SIITME), pp. 260-263, 2019.
- [25] P. Bonteanu, R. G. Bozomitu, **A. Cracan**, and G. Bonteanu, "A high detection rate pupil detection algorithm based on contour circularity evaluation," in Proc. 2019 IEEE 25th International Symposium for Design and Technology in Electronic Packaging (SIITME), pp. 264-267, 2019.
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- [29] **A. Cracan** and G. Bonteanu, "Wide dynamic range current mirror," in Proc. 2018 International Semiconductor Conference (CAS), pp. 173-176, 2018.
- [30] G. Bonteanu, **A. Cracan**, and R. G. Bozomitu, "A Study on the Gm Based Current Mode Capacitance Multipliers Implementation," in Proc. 2018 IEEE 24th International Symposium for Design and Technology in Electronic Packaging (SIITME), pp. 205-208, 2018.
- [31] G. Bonteanu, **A. Cracan**, and R. G. Bozomitu, "A Tunable Transconductor with Temperature and Process Immunity," in Proc. 2018 IEEE 24th International Symposium for Design and Technology in Electronic Packaging (SIITME), pp. 251-254, 2018.
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- [36] D. F. Chipper and **A. Cracan**, "A novel algorithm and architecture for a high-throughput VLSI implementation of DST using short pseudo-cycle convolutions," in Proc. 2017 International Symposium on Signals, Circuits and Systems (ISSCS), pp. 1-4, 2017.
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- [39] A. Iosub, J. Kirscher, M. Rafaila, **A. Cracan**, A. Buzo, G. Pelz, and L. Goras, "Current sampling based saturation limits design of PI regulators in motor control applications," Buletinul Institutului Politehnic din Iași, Secția Electrotehnică, Energetică, Electronică, Vol. 62 (66), Nr. 2, pp. 9-20, 2016.
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- [45] N. Cojan Jr., **A. Cracan**, and P. Brînzoi, "A novel Schmitt trigger and its application in oscillation based BIST," Buletinul Institutului Politehnic din Iaşi, Secţia Electrotehnică, Energetică, Electronică, Tomul LVII (LXI), Fasc. 2, pp. 63-74, 2011.
- [46] **A. Cracan**, N. Cojan Jr., and P. Brînzoi, "Mixed-signal automatic tuning circuit for integrated analog filters," Buletinul Institutului Politehnic din Iaşi, Secţia Electrotehnică, Energetică, Electronică, Tomul LVII (LXI), Fasc. 4, pp. 65-75, 2011.
- [47] P. Brînzoi, **A. Cracan**, and N. Cojan Jr., "Scalar based tunable high-pass Sallen-Key filter," Buletinul Institutului Politehnic din Iaşi, Secţia Electrotehnică, Energetică, Electronică, Tomul LVII (LXI), Fasc. 4, pp. 57-64, 2011.
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**Încadrarea în ramura de ştiinţă:** Toate lucrările enumerate mai sus se încadrează în ramura de ştiinţă corespunzătoare postului — Inginerie electronică, telecomunicaţii şi tehnologii informaţionale — sau într-o ramură înrudită.

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Semnătura candidatului: ..