Data 04.06.2020

L I S T A D E L U C R Ă R I

Candidat: **ANGHEL CRISTIAN - Dr**. din 2010, **Preparator universitar** din 2003, **Asistent universitar** din 2006, **Sef de Lucrari** din 2011, **Conferenţiar** din 2016

1⁰

Teza de doctorat

Contribuţii la implementarea sistemelor de comunicaţii lucrând în canale MIMO.

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C. Cărţi publicate

C1. **Cristian Anghel**, Remus Cacoveanu, "*Advanced Transmissions Techniques in WiMAX*" – Chapter 5 "MicroTCA Compliant WiMAX BS Split Architecture with MIMO Capabilities Support Based on OBSAI RP3-01 Interface", Editura InTech, ISBN 978-953-307-965-3, pag. 77-102, 2011.

C2. **Cristian Anghel**, Cristian Stanciu, Constantin Paleologu, "*Field - Programmable Gate Array"* - Chapter 2 – "Efficient FPGA implementation of a CTC turbo decoder for WiMAX/ LTE mobile systems*"*, Editura Intech, http://dx.doi.org/10.5772/67017, ISBN 978-953-51-3208-0, Print ISBN 978-953-51-3207-3, May 31, 2017 (32 pagini).

C3. **Cristian Anghel**, Cristian Stanciu, "*Limbaje de descriere hardware si metodologia proiectarii FPGA,"* Editura Printech, ISBN 978-606-23-0577-2, 170 pagini, 2016

C4. **Cristian Anghel,** Cristian Stanciu, "*Turbo Codes in Wireless Communications - FPGA Implementation*," Editura Printech, ISBN 978-606-23-0849-0, 125 pagini, 2018

I. Culegeri şi îndrumare publicate în edituri cu ISBN

I1. **C. Anghel**, A. A. Enescu, *„Sisteme integrate pentru prelucrarea semnalelor – Îndrumar de laborator"*, Editura Electronica 2000, ISBN 978-973-7860-10-1, 97 pagini, 2009.

I2. **Cristian Anghel,** *"Limbaje de descriere hardware si metodologia proiectarii FPGA. Indrumar de laborator"*, Editura Printech**,** ISBN 978-606-23-1123-0, 81 pagini, 2020

3⁰

Ri. Articole/studii publicate în reviste de specialitate de circulaţie internaţională recunoscute

R1. **Cristian Anghel**, Adrian Andronache, "A controlled NLMS algorithm for echo cancellation, implemented on MOTOROLA STARCORE SC140 DSP*", Revue Roumaine, Sci. Techn.– Électrotechn. et Énerg.,* ***47****, 4*, Bucarest, 2002

R2. C. Elisei-Iliescu, C. Paleologu, J. Benesty, C. Stanciu, **C. Anghel**, si S. Ciochină, "Recursive least-squares algorithms for the identification of low-rank systems," *IEEE/ACM Trans. Audio, Speech, Language Processing*, vol. 27, pp. 903–918, May 2019 – ISI Q1, **WOS:000463481000003**

R3. C. Elisei-Iliescu, C. Stanciu, C. Paleologu, J. Benesty, **C. Anghel**, si S. Ciochină, "Efficient recursive least-squares algorithms for the identification of bilinear forms," *Digital Signal Processing*, vol. 83, pp. 280-296, Dec. 2018 – ISI Q2, **WOS:000453637100025**

R4. **C. Anghel**, C. Stanciu, si C. Paleologu, "LTE turbo decoding parallel architecture with single interleaver implemented on FPGA," Circuits, Systems & Signal Processing, 21 pages, http://link.springer.com/article/10.1007/s00034-016-0362-z, first online 18 July, 2016, ISSN: 0278-081X (print version), ISSN: 1531-5878 (electronic version), volume 36 Issue 4, April 2017, Pages 1455-1475, DOI: 10.1007/s00034-016-0362-z – ISI Q2, **WOS:000395187800008**

R5. C. Stanciu, **C. Anghel** si C. Paleologu, "Efficient recursive implementation of a quadratic permutation polynomial interleaver for LTE systems," *Revue Roumaine des Sciences Techniques – Serie Electrotechnique et Energetique*, Vol. 61, 1, pp. 53–57 (5 pagini), Bucharest, 2016. **WOS:000378014100011**.

R6. **C. Anghel**, C. Stanciu si C. Paleologu, "Efficient field programmable gate array implementation of a convolutional turbo code for long term evolution systems," *Revue Roumaine des Sciences Techniques – Serie Electrotechnique et Energetique*, vol. 60, no. 2, pp. 163-173 (11 pagini), 2015. **WOS:000355067400006**

Rn. Articole/studii publicate în reviste de specialitate de circulaţie naţională recunoscute

R7. **Cristian Anghel,** Andrei Alexandru Enescu s.a., "Implementarea eficientă pe FPGA a unui decodor turbo compatibil cu standardul 802.16e", Revista *Telecomunicatii*, 2007.

R8. **Cristian Anghel,** Remus Cacoveanu, "A digital method for obtaining high accurate clock reference using GPS-disciplined VCXO", *Buletinul Ştiinţific al Universităţii Politehnica din Timişoara, Tom 53(67), Fascicola 2*, 2008, pag. 113-117

R9. **Cristian Anghel,** Remus Cacoveanu, " OBSAI RP3-01 Interface Implemented on FPGA*",* *Buletinul Ştiinţific al Universităţii Politehnica din Bucuresti,* Series C, Vol. 72, Iss. 4, 2010, ISSN 1454-234x, pag 125-136

R10. **C. Anghel**, C. Stanciu, si C. Paleologu, "Novel parallel CTC turbo decoder architecture for LTE systems, "*University Politehnica of Bucharest Scientific Bulletin, Series C – Electrical Engineering and Computer Science*, Vol. 79, Iss. 1, pp. 99-112 (14 pagini), 2017, ISSN 2286-3540. **WOS:000405770100008**

Vi. Articole/studii publicate în volumele unor manifestări ştiinţifice internaţionale recunoscute

Vi1. Andrei Alexandru Enescu, Constantin Paleologu**, Cristian Anghel**, "Spatial multiplexing turbo receiver with reduced complexity", *The Third International Conference on Sensor Technologies and Applications SENSORCOMM 2009*, Athens/Glyfada, Greece

Vi2. **Cristian Anghel,** Andrei Alexandru Enescu s.a. , "FPGA implementation of a CTC Decoder for H-ARQ compliant WiMAX systems", *Proceedings of International Conference on Design & Technology of Integrated Systems*, DTIS 2007, Marocco, Page(s): 82-86

Vi3. V. Mocanu, **C. Anghel**, A. A. Enescu, "FPGA Implementation of a Digital Front End Block for a Multi-Carrier Multi-Antenna System", *Proceedings of International Semiconductors Conference CAS 2009*, Sinaia, , pag. 431-434.

Vi4. **Cristian Anghel**, Constantin Paleologu s.a, "FPGA Implementation of an Acoustic Echo Canceller Using an VSS-NLMS Algorithm", *Proceedings of International Conference ISSCS 2009*, Iaşi, pag. 369-372.

Vi5. Andrei Nedelcu, Andrei Alexandru Enescu, **Cristian Anghel**, "An overview of soft-output sphere decoders with constant throughput", *Proceedings of International Conference ISSCS 2009*, Iaşi, pag. 109-112.

Vi6. **Cristian Anghel**, Remus Cacoveanu, "BS split architecture with MIMO capabilities support based on OBSAI RP3-01 Interface", *Proceedings of International Conference ISSCS 2009*, Iaşi, pag. 271-274.

Vi7. **Cristian Anghel,** Andrei Enescu, Remus Cacoveanu**, "**VLSI turbo decoder with H-ARQ capability for WiMAX**",** *Proceedings of International Conference Communications 2008,* Bucureşti, pag. 301-304

Vi8. Silviu Ciochina, **Cristian Anghel**, Andrei Alexandru Enescu, *"*Sub-optimal solutions to code synthesis for space-time diversity*", Proceedings of International Conference* SCS 2003, Iaşi, pag. 53-56

Vi9. Adrian Andronache, **Cristian Anghel**," A novel adaptation scheme in the NLMS algorithm for digital network echo canceller implemented on MOTOROLA STARCORE SC140 DSP*", Proceedings of International Conference Communications 2002*, Bucureşti

Vi10. **Cristian Anghel,** Andrei Alexandru Enescu, Constantin Paleologu, Silviu Ciochina, "CTC Turbo Decoding Architecture for H-ARQ Capable WiMAX Systems Implemented on FPGA", *Proceedings of the Ninth International Conference on Networks ICN 2010, Franta*

Vi11. **Cristian Anghel**, Constantin Paleologu, Jacob Benesty, Silviu Ciochină, "FPGA Implementation of a Variable Step-Size Affine Projection Algorithm for Acoustic Echo Cancellation", *EUSIPCO 2010*, Aalborg, Danemarca

Vi12. Alexandru Andreescu, Alexandru Ghita, Andrei Alexandru Enescu, **Cristian Anghel**, "Long Term Evolution Primary Synchronization Algorithms", *ISETC 2010*, Pag 125-128, Timisoara, Romania

Vi13. Mihai Bartis, Vlad Mocanu, Andrei Aalexandru Enescu, **Cristian Anghel**, " Achieving Secondary Synchronization for Downlink in the Long Term Evolution Standard", *ISETC 2010,* Pag 129-132, Timisoara, Romania

Vi14. Cristian Stanciu, **Cristian Anghel**, Constantin Paleologu s.a., "A Proportionate Affine Projection Algorithm Using Dichotomous Coordinate Descent Iterations", *Proceedings of International Conference ISSCS 2011,* Iaşi, pag. 343-346.

Vi15. Stanciu, **Cristian Anghel**, Constantin Paleologu s.a., "FPGA Implementation of an Efficient Proportionate Affine Projection Algorithm for Echo Cancellation", *EUSIPCO 2011*, Barcelona, Spania

Vi16. **Cristian Anghel**, Valentin Stanciu, Cristian Stanciu, Constantin Paleologu, "CTC Turbo Decoding Architecture for LTE Systems Implemented on FPGA", *IARIA ICN 2012*, Reunion, France

Vi17. Cristian Stanciu, **Cristian Anghel**, "Numerical Properties of the DCD-RLS Algorithm for Stereo Acoustic Echo Cancellation," *COMM 2014*, Bucuresti, Romania

Vi18. **Cristian Anghel**, Constantin Paleologu, "Simplified Parallel Architecture for LTE-A Turbo Decoder Implemented on FPGA," *Proceedings of the 9th International conference on Circuit, Systems, Signal and Telecommunications CCST 2015*, Dubai, pp. 102-111

Vi19. **Cristian Anghel**, Cristian Stanciu, Constantin Paleologu, "Sorting methods used in parallel turbo decoding for LTE systems," *Proceedings of International Conference ISSCS 2015*, Iaşi**,** Romania

Vi20. **Cristian Anghel**, Cristian Stanciu, Constantin Paleologu, "Performances evaluation of a CTC turbo decoder for LTE systems," *IEEE ELMAR 2015*, Zadar, Croatia, pp. 89-92.

Vi21. Cristian Stanciu, **Cristian Anghel**, Lucian Stanciu, "Efficient FPGA Implementation of the DCD-RLS Algorithm for Stereo Acoustic Echo Cancellation," *Proceedings of International Conference ISSCS 2015*, Iaşi, Romania

Vi22. Lucian Stanciu, Valentin Stanciu, **Cristian Anghel**, , " Grouped B-Spline Functions for the Design of Quadrature Mirror Filters," *Proceedings of International Conference ISSCS 2015*, Iaşi, Romania

Vi23. **Cristian Anghel**, Constantin Paleologu, "2G Ultra Low Cost Mobile Phone Positioning without GPS," *IARIA AICT 2015*, Bruxelles, Belgia, pp. 53-56.

Vi24. Silviu Ciochina, Constantin Paleologu, Jacob Benesty, Cristian Anghel, "An optimized affine projection algorithm for acoustic echo cancellation ," *SpeD 2015*, Bucharest, Romania

Vi25. Cristian Stanciu, **Cristian Anghel**, Constantin Paleologu, Silviu Ciochina, Jacob Benesty, "On the Numerical Properties of an Optimized NLMS Algorithm," 4p, *COMM* 2016, Bucharest

Vi26. C. Elisei-Iliescu, C. Stanciu, C. Paleologu, J. Benesty, **C. Anghel**, and S. Ciochina, "Low-complexity RLS algorithms for the identification of bilinear forms," in *Proc. EUSIPCO*, 2018, pp. 455-459, Rome, Italy, **WOS:000455614900092**

Vi27. C. Paleologu, J. Benesty, C. Elisei-Iliescu, C. Stanciu, **C. Anghel**, and S. Ciochina, "A proportionate NLMS algorithm for the identification of sparse bilinear forms," in *Proc. IEEE TSP*, 2018, pp. 698-701, Athens, Greece, **WOS:000454845100156**

Vi28. C. Elisei-Iliescu, C. Paleologu, J. Benesty, C. Stanciu, **C. Anghel**, and S. Ciochina, "Regularized recursive least-squares algorithms for the identification of bilinear forms," in *Proc. IEEE International Symposium on Electronics and Telecommunications (ISETC)*, 2018, Timisoara, Romania, **WOS:000463031500055**

Vi29. C. Elisei-Iliescu, C. Stanciu, C. Paleologu, J. Benesty, **C. Anghel**, and S. Ciochină, "Robust variable-regularized RLS algorithms," *The Fifth Joint Workshop on Hands-free Speech Communication and Microphone Arrays*, (5 pagini), March 1-3, 2017, San Francisco, USA. **WOS:000403394000035**

Vi30. C. Stanciu, **C. Anghel**, M. Udrea, and L. Stanciu, "Variable-Regularized Low Complexity RLS Algorithm for Stereophonic Acoustic Echo Cancellation," in *Proc. IEEE International Symposium on Signals, Circuits and Systems (ISSCS)*, 2017, Iasi, Romania, **WOS: 000425211500071**

Vi31. I. Albu, **C. Anghel**, and C. Paleologu, "Adaptive filtering in acoustic echo cancellation systems — A practical overview," in *Proc. IEEE International Conference on Electronics, Computers and Artificial Intelligence* (ECAI), 2017, Ploiesti, Romania, **WOS:000425865900058**.

Vi32. C. Stanciu, **C. Anghel**, C. Paleologu, S. Ciochina, and J. Benesty, "On the numerical properties of an optimized NLMS algorithm," in *Proc. IEEE International Conference COMMUNICATIONS (COMM)*, 2016, Bucharest, Romania, **WOS:000383221900005**.

Vi33. C. Stanciu, **C. Anghel**, C. Paleologu, S. Ciochina, and J. Benesty, "FPGA implementation of an optimized NLMS algorithm," *in Proc. IEEE International Symposium on Electronics and Telecommunications* (ISETC), 2016, Timisoara, Romania, **WOS: 000390717800061**.

Vi34. C. Stanciu, M. Udrea, **C. Anghel**, and R.A. Dobre, "Improved Regularization for a Low-Complexity RLS Algorithm," in *Proc. 24th Telecommunications Forum* (TELFOR) 2016, Belgrad, Serbia, **WOS: 000393491700103**.

Vi35. C. Paleologu, J. Benesty, C. Stanciu, **C. Anghel**, and M. Stenta, "Robust regularization of the recursive least-squares algorithm," in *Proc. IEEE International Conference on Electronics, Computers and Artificial Intelligence* (ECAI), 2016, Ploiesti, Romania, **WOS:000402541200006**.

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Keynote speaker invitat la conferinta internationala

Cristian Anghel, Turbo codes in UMTS/ WiMAX/ LTE systems: solutions for an efficient FPGA implementation, *IARIA AICT 2015*, Bruxelles, Belgium

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F. Proiecte de cercetare-dezvoltare pe bază de contract/grant

- în calitate de responsabil:

F1. "Contributii la proiectarea sistemelor de comunicatii lucrand in canale MIMO", Grant CNCSIS, tip Td, cod CNCSIS TD 1, 2008-2009, director

F2. „Efficient solutions for parallel turbo decoder implementation for LTE systems", Sectoral Operational Program Human Resources Development 2007-2013 of the Ministry of European Funds through the Financial Agreement POSDRU/159/1.5/S/134398, director

F3. European Space Agency through the contract "Hybrid - Inter Satellite Link" with the number 4000121222/17/NL/CBi, subcontracted by UPB through the contract 18/05.10.2017. (2017 - 2019), director

F4. Proiect Grant intern UPB Nr. 99/22.11.2016, cod proiect 533, "Titlu: Proiectarea si dezvoltarea unui echipament 4G cu antene multiple dedicat conectarii la internet a autoturismelor", director

- în calitate de participant:

F5. "*Noi algoritmi adaptivi cu convergenţă variabilă*", UEFISCDI, type PN-II-RU-TE, nr. 7/2010, code TE-50, 2010-2013.

F6. "*Soluţii de creştere a performanţelor compensatoarelor de ecou acustic multi-canal. Aplicaţii în sistemele de teleconferinţă*", CNCSIS, type AT, code 15, 2007-2008.

F7. *„Contributii la cresterea performantelor compensatoarelor de ecou acustic folosite in sistemele de comunicatii cu maini libere*," MEC-UEFISCSU, type CEEX-ET, code 17, 2006-2008

F8. „*Novel adaptive receivers for communications systems with code division multiple access*," type CEEX-ET, code 53, 2006-2008

F9. „*Novel adaptive algorithms appropriate for finite precision implementation. Applications in communication networks*," CNCSIS, type AT, 2004-2005

F10. "*Solutii de crestere a eficientei spectrale in sistemele de comunicatii OFDM*", CNCSIS, code 59, 2006-2008

F11. *"Fenomene rezonante in structuri selective pentru procesarea semnalelor in banda 0,1 - 18 GHz*", CERES C3/2003, 2003-2005

F12. ""*Utilizarea fenomenelor de cuplaj multiplu la procesarea semnalelor in sistemele UMTS*", CERES C4/2004, 2004-2006

F13. "*ATHENA- Digital Switchover: Developing Infrastructures for Broadband Access*", STREP (FP6), nr FP6-507312

F14. "*Solutii robust pentru suprimarea interferentelor adaptive"*, PN II – IDEI, code CNCSIS 1027, 2007-2010

F15. "*Cercetarea si realizarea unor structuri radiante selective miniatura pentru comunicatiile mobile din generatia a III-a (3G)*", CNCSIS, nr. 27692/14.03.2005, code CNCSIS 335/2005, 2005-2007

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