

## **Professor Dumitru POPESCU, Ph.D.**

### **List of scientific publications (2000-2016)**

#### **1. Monographs, Book chapters**

- 1.1.D. Popescu, C. Lupu, C. Petrescu, M. Alexandru, M. Mateescu, *Sisteme de Conducere a Proceselor*, Editura Printech (COD CNCSIS 54), 380 pag., Bucuresti 2004, ISBN 973-718-016
- 1.2. L. Foulloy, G.D. Tanguy, D. Popescu, *Modelisation, Identification et Commande des Systemes*, Editura Academiei Romane, Bucuresti, 2004
- 1.3. D. Popescu, D. Stefanoiu, C. Lupu, C. Petrescu, B. Ciobotaru, C. Dimon, *Automatica Industriala*, Editura AGIR (COD CNCSIS 140), Bucuresti 2006, 382 pag., ISBN 973-720-093-4
- 1.4. C. Petrescu, D. Popescu, C. Lupu, *Arhitecturi hardware/software pentru sisteme numerice de conducere*, Editura MatrixRom (COD CNCSIS 39), Bucuresti, 2007, 132 pag, ISBN 978-973-755-197-9
- 1.5. P. Borne, F. Filip, D. Popescu, M. Benrejeb, *Automatique Avancee et Informatique Appliquee*, Editura Academiei Romane, Bucuresti, Romania, 250 pag., 2009.
- 1.6. Stefanoiu D., Stanasila O, Popescu D., *Wavelets: Theory and Applications*, Editura Academiei Romane, Bucuresti, Romania, 750 pag., 2009.
- 1.7 C. Lupu, A. Udrea, D. Popescu, C. Petrescu, A. Ticlea, C. Dimon, B. Irimia, *Solutii practice de conducere a proceselor neliniare*, Editura Politehnica Press, Bucuresti, 2010.
- 1.8. D. Popescu, C. Dimon, *Automatizări industriale si conducere de proces*, Editura AOSR, Bucuresti, 2011.
- 1.9. D.Popescu, R.Dobrescu, F.Ionescu, D.Stefanoiu, *Modelare in Ingineria Proceselor Industriale*, Editura AGIR, Bucuresti 2011.
- 1.10. P. Borne, D.Popescu, F.Filip, D.Stefanoiu, *Optimisation en Sciences d' Ingenieur-Methodes Exactes*, Editura Hermes-Lavoisier Paris, ISBN 978-2-7462-3927-2, 2013.
- 1.11. P. Borne, D.Popescu, F.Filip, D.Stefanoiu, *Optimization Techniques for Engineering- Exact Methods*, Editura John Wiley, Londra, , ISBN: 978-1-84821-432-3, 2013.
- 1.12 . D.Stefanoiu, P. Borne, D.Popescu, F.Filip, *Optimisation en Sciences d' Ingenieur-Methodes Euristiques, Stochastiques, et Support de Decision*, Editura Hermes-Lavoisier, Paris, ISBN 978-2-7462-3927-2 , 2014.
- 1.13. D.Stefanoiu, P. Borne, D.Popescu, F.Filip, *Optimization Technique for Engineering- Methaeuristics, Stochastic Methods and Decision Support*, Editura John Wiley, Londra ISBN 978-1-84821-498-9, 2014
- 1.14. D.Popescu, D.Stefanoiu, P.Borne, *Advanced Control Design, for Industrial Processes* (appeared in 2016)
- 1.15. D.Popescu, D.Stefanoiu, P.Borne, *Conception de la Commande pour les Applicatons Industrelles*. Editura Hermes-Lavoisier Paris, (appeared in 2017)

#### **2. ISI and BDI Articles**

- 2.1. D. Popescu, A. Fanea, *Design, refinement and accuracy of PID Algorithms*, System Structure and Control, Prague, Elsevier, 2001
- 2.2.D. Popescu, M. Serbanescu, *Large Scale Systems: Theory And Applications*, 2001 (LSS'01), 9th IFAC Symposium on Large Scale Systems, Book Series: IFAC Symposia Series, pp. 427-432, 2002

- 2.3. I. Matei, D. Popescu, C. Lupu, I. Luican, Level control system - Virtual experiment, ITI 2003: Proceedings of the 25<sup>th</sup> ICITTI 2003, pages: 249-254 DOI: 10.1109/ITI.2003.1225353, ISBN: 953-96769-6-7, WOS:000185582600040
- 2.4. C. Lupu, D. Popescu, Ciubotaru, C. Petrescu, G. Florea, Switching Solution for Multiple Models Control Systems, MED06 - 14th Mediterranean Conference on Control Automation, 28-30 June, 2006, Ancona, Italy, paper WLA2-2, pp. 1-6, ISBN 0-9786720-1-1, DOI 10.1109/MED.2006.328827, WOS:000243663000024
- 2.5. Popescu D., Lupu C., Lottin J.,- Control and optimisation for the cowper of a steelmaking plant, The Proceedings of the IMACS Multiconference on Computational Engineering in Systems Applications 4-6 oct., 2006, Beijing, China, pp. 838-842, IEEE Cat. No.06EX1583C, cod 9483740, Publisher IEEE, ISBN 7- 900718-14-1, WOS:000244084600159
- 2.6.C. Lupu, D. Popescu, C. Petrescu, A. Ticlea, C. Dimon, A. Udrea, B. Irimia, Multiple-Model Design and Switching Solution for Nonlinear Processes Control, ISC'08, The 6th Annual Industrial Simulation Conference, 2008 , 09-11 June, Lyon, France, pp. 71-76, ISBN 978-90-77381-4-03, WOS:000263829300010
- 2.7. F. Filip, D. Popescu, M. Mateescu, Optimal decisions for complex systems, Mathematics and Computers in Simulation, Vol. 76 (5-6), pp. 422-492, 2008, ISSN: 0378-4754, WOS: 000252665700010
- 2.8. Florin Filip, Dumitru Popescu, Mihaela Mateescu, Optimal Decisions for Complex Systems- software Packages, Mathematics and Computers in Simulation, 76, (5-6 January 2009), p. 422-429. ISSN: 0378-4754.
- 2.9. Cornoiu Mihai, Bara Catalin, Popescu Dumitru, Metaheuristic Approach in Nonlinear Systems, UPB, Scientific Bulletin, Series A, ISSN 1223-7027, 2013.
- 2.10..D. Popescu, C. Petrescu, C. Dimon, M. Boangiu, Control and Optimization for a Petrochemical Reactor, pp.14-19, Villeneuve d'Ascq, Franta, 2013, Proceedings IEEE, ISBN: 978-1-4799-2021-1.
- 2.11. A. Tache, C. Vasseur, D. Stefanoiu, M. Vermandel, D. Popescu, Supervised Classification of Cerebral Blood Vessels, pp.38-43, Villeneuve d'Ascq, Franta, 2013, Proceedings IEEE, ISBN: 978-1-4799-2021-1.
- 2.12. S.O. Medianu, C. Lupu, D. Popescu, L. Lefèvre, Optimal Closed-Loop Identification Solution Using the Direct and Indirect Methods for a Flexible Transmission System, pp.74-79, Villeneuve d'Ascq, Franta, 2013, Proceedings IEEE, ISBN: 978-1-4799-2021-1.
- 2.13. H. Dahmani, O. Pagès, A. El Hajjaji, D. Popescu, Observer-Based Multi-Actuator Vehicle Chassis Control in Critical Situations, pp.156-161, Villeneuve d'Ascq, Franta, 2013, Proceedings IEEE, ISBN: 978-1-4799-2021-1; 1.
- 2.14. Ciprian Lupu, Livia Bandici, Carmen Molnar, Dumitru Popescu, Reduced Simulation Strategy- Multiple Model Applicability , Journal OF Electrical and Electronics Engineering , Volume 6, Issue 1, May 2013, Pages 63-68, ISSN 1844-6035, indexata Scopus.
- 2.15. C.Bara, M.Cornoiu, D.Popescu, Optimal and Fault Detection Control Strategy for Ship Stabilization, Scietific Bulletin of the Politehnica University of Timisoara, Vol. 57, nr.2, ISSN 1224-600X, 2012.
- 2.16. S.Carstoiu, D.Popescu, Simulator for the Multimodel Control of Diesel Engienes, SIC Jurnal, ICI 2014.
- 2.17. L.Lefevre, S.Medianu, C.Lupu, D.Popescu, Adaptive Control Solution of a Flexible Transssmition System, CEAI Jurnal, UPB, 2014.
- 2.18. S.Medianu, L.Lefevre D.Popescu,, C.Lupu, Simulator for Open Loop Identification of Dynamic Systems, Scientific Bulletin C, UPB, 2014.
- 2.19. C. Sandu, D.Popescu, Reinforcement Learning for the Control of Blood Pressure in Post Cardiac Surgery Patients, Scientific Bulletin C, UPB, 2014.

### **3. Articles published in B+ Conference Proceedings**

- 3.1. D. Popescu, C. Petrescu, C. Lupu, C. Dimon, Control si optimizare în instalatii termoenergetice, Automatizări si Instrumentatie, Nr. 6, 2009.
- 3.2. D. Popescu, C. Petrescu, C. Lupu, C. Dimon, Commande et optimisation des installations de chauffage de l'air dans une aciérie, publicat in Automatique Avancée et Informatique Appliquée (Editors: P. Borne, F.Gh. Florin, M. Benrejeb, D. Popescu), Romanian Academy Press, Bucharest, 2009, pp. 193-197. ISBN 978-973-27-1806-3.
- 3.3. D. Popescu, C.Dimon, G.D.Tanguy, Modelarea si Controlul Traficului Urban, Abordare Macroscopica, Revista Analele AOSR, 2014.
- 3.4. C.Lupu, D.Popescu, Load Balancing Structure for Multiple Sources Systems, Revista Analele AOSR, 2014.

### **4. Articles published in ISI Conference Proceedings**

- 4.1. C. Dimon, G. Dauphin-Tanguy, D. Popescu, Macroscopic Modeling of Road Traffic by Using Hydrodynamic Flow Models, 20<sup>th</sup> Mediterranean Conference on Control and Automation (MED 2012), Barcelona, Spain, 2012.
- 4.2. C. Dimon, D. Popescu, Admissible Modeling Disturbances for the Control of a Road Sector, IEEE 7<sup>th</sup> International Symposium on Applied Computational Intelligence and Informatics (SACI 2012), Timisoara, Romania, 2012, pp. 405-409. DOI: 10.1109/SACI.2012.6250038
- 4.3. D. Popescu, F. Ionescu, M. Mircioiu, C. Lupu, Robust Control and Optimization for an Ethilene Reactor, MED 2011.
- 4.4. A. Pinte, N. Christov, P. Borne, D. Popescu, A. Badea, Optimal Control of Variable Speed Wind Turbines, MED 2011.
- 4.5. C. Lupu, D. Popescu, R. Gyorodi, A. Udrea, Precise Ratio Control Structure for Nonlinear Blend Processes, MED Barcelona, 2012.
- 4.6. C. Bara, M. Cornoiu, D. Popescu, An Optimal Control Strategy of Ballast Systems Used in Ship Stabilization, MED Barcelona, 2012.
- 4.7. Mihai Cornoiu, Dumitru Popescu, Pierre Borne, Dan Stefanoiu, Metaheuristic , vs. Adaptive Approach in Discrete-Time Hammerstein System Identification, CSCS 19, Bucuresti, mai 2013.
- 4.8. I.Tache, A.Udrea, D.Popescu, M.Vermandel, Ch.Vasseur, Preliminary Results for Automatic Detection of Artero-Venous Malformations from Medical Images, CSCS, Bucuresti, 2013.
- 4.9. Catalin Bara, Dumitru Popescu, Florin Filip, SCADA System for Ship Stabilisation Design using an Expert Sistem, IFAC MCPL Coference, 11-13 septembrie , 2013, Brasil.
- 4.10. C.Miron, D.Popescu Designed Control Systems with Distributed Parameters, ICSTCC 18, Sinaia 2014.
- 4.11. C.Dimon, D.Popescu, D.Stefanoiu, Fuzzy Modeling and Control for a Road Section, ICSTCC 18, Sinaia 2014.
- 4.12. D.Popescu, S.Medianu, L.Lefevre, C.Lupu, Simulator for open loop Identification and Control, ICSTCC 18, Sinaia 2014.
- 4.13. C.Sandu, D.Popescu Inteligent Control System of BP using BRS model, and Q- learning Control, ICSTCC 19, Sinaia 2015.
- 4.14. C.Torous, D.Popescu, D.Balan, D. Balan, Search Algorithmes for the Maximum Power Point on Photovoltaic Panels, ICSTCC 18, Sinaia 2015.

- 4.15. C.Miron D.Popescu, N.Christov, A.Aitouche, Control Based Observer for PV System by Fuzzy Takagi Sugeno Model, ICSTCC 18, Sinaia 2015.
- 4.16. C.Torous, C. Lourdes D.Popescu, Extremal Control System of BP using BRS model, and Q-learning Control, ICSTCC 19, Sinaia 2016.
- 4.17. C. Miron, D.Popescu, S.Olteanu, Search Algorithms for the Maximum Power Point on Photovoltaic Panels, ICSTCC 18, Sinaia 2016.

## 5. Articles published in BDI Conference Proceedings

- 5.1. V. Tanasa, A. Chiriac, D. Popescu, (UPB, Romania), Dorothee Syrot (SUPELEC), Errors Estimation for the Numerical Control Computations in the Industrial Applications, ICSTCC, Sinaia 2013.
- 5.2 F.Tudor, D. Popescu, (UPB, Romania) P. Borne (Ecole Centrale de Lille), Advanced Control for Thermo-energetic Installations, ICSTCC, Sinaia 2013.
- 5.3. C. Lupu, D. Popescu, C. Petrescu, A. Ticlea, B. Irimia, C. Dimon, A. Udrea, Multiple-model design and switching solution for nonlinear processes control, The 6th Annual Industrial Simulation Conference (ISC 2008), Lyon, France, 2008, pp. 71-76. ISBN 978-90-77381-4-03
- 5.4. D. Popescu, C. Lupu, C. Dimon, I. Matei, Virtual laboratory for distance learning, remote process control, 17<sup>th</sup> IFAC World Congress, Seoul, Korea, 2009, pp. 9807-9811. ISBN 978-1-1234-7890-2/08.
- 5.5. Dumitru Popescu, Catalin Dimon, Catalin Petrescu, Control and Optimization for Steel Plant Preheating Installations, Proceedings of the 17<sup>th</sup> IFAC World Congress, p. 1964-1969. ISBN: 978-1-1234-7890-2/09.
- 5.6. Lupu C., A. Udrea, D. Popescu, C. Flutur, Stable Algorithms Switching for Multiple Models Control Systems, WSEAS TRANSACTIONS on SYSTEMS, nr. 4, vol. 8, May 2009, pp. 251-262, ISSN 1991-8763 (Indexare SCOPUS, ACM).
- 5.7. Lupu C., A. Udrea, D. Popescu, C. Petrescu - Numerical Stability of Adaptive Control Algorithms, Buletinul Stiintific al UPB, seria C, apare in vol. 72, no.2, 2010, ISSN 1454-234x, (Indexare SCOPUS, INSPEC).
- 5.8. E. Cimpoesu, B. Ciubotaru, D. Popescu, Application Example of Model Following in Aircraft Fault Tolerant Control, CSCS18, Bucuresti, 2011.
- 5.9 A. Pinteau, N. Christov, P. Borne, D. Popescu, H-infinity Controller Design fir Variable Speed Wind Turbines, CSCS18, Bucuresti, 2011.
- 5.10. C. Bara, D. Popescu, C. Lupu, Expert System for Generating SCADA Configurations with Practical Applications in Naval Industry, CSCS18, Bucuresti, 2011.
- 5.11. Udrea A., Lupu C., Popescu D., Hysteresis Control of a (Ba/Sr)Tio3 Based Actuator: A Comparison of Prandtl-Ishlinskii and Nonlinear Compensator Numerical Methods, IFAC World Congress, Volume # 18 | Part# 1, Milano, 2011.
- 5.12. Pinteau A., Christov N., Popescu D., Borne P., LQG Control of Horizontal Wind Turbines for Blades and Tower Loads Alleviation, IFAC World Congress, Volume # 18 | Part# 1, Milano, 2011.
- 5.13. Tudor F., Popescu D., Stefanoiu D., Self Scheduled H-infinity Control of a Wind Turbine. A real Time Implementation, Proceedings of ICINCO, Roma, 2012.
- 5.14. Udrea A., Tanase M., Popescu D., Nonlinear Deterministic Method for Computer Aided Diagnosis in case of Kidny Diseases, Proceedings of ICINCO, Roma, 2012.
- 5.15. Pinteau A., Christov N., Popescu D., Borne P., LQG Control of Horizontal Wind Turbines for Blades and Tower Loads Alleviation, IFAC World Congress, Volume # 18 | Part# 1, Milano, 2011.

- 5.16. Pinteau, D. Popescu, P. Borne, Modeling and Control of Wind Turbines, IFAC Conference, LSS 2010, Lille.
- 5.17. C. Lupu, A. Udrea, D. Popescu, C. Petrescu, T. Airimitoiaiei - Solutions for Hysteresis Process Control- ICCC'2009, The 10th International Carpathian Control Conference, 24-27 May, Zakopane, Poland, ISBN 83-89772-51-5, pp. 59-62.
- 5.18. B. Airimitoiaie, D. Popescu, C. Dimon, Robust control and optimization for thermo-energetic installations, IFAC Workshop on Control Applications of Optimizations, 6-8 May 2009, University of Jyvaskyla, Agora, Finland , Preprints,CD.
- 5.19. B. Airimitoiaie, D. Popescu, C. Dimon, S. Stamatescu, Robust control in real time applications, 1st IFAC/ACCA International Workshop on Logistics, December 9-10, 2008, Santiago, Chile, Preprints, CD.
- 5.20. C. Lupu, D. Popescu, C. Petrescu, A. Ticlea, B. Irimia, C. Dimon, A. Udrea, Multiple-Model Design and Switching Solution for Nonlinear Processes Control, Industrial Simulation Conference, Lyon, France, June 2008, Preprints CD.
- 5.21. D. Popescu, C. Lupu, C. Dimon, I. Matei, Virtual Laboratory for Distance Learning, Remote Process Control, Proceedings of the 17<sup>th</sup> IFAC World Congress, Seoul, Korea, p. 9807-9811. ISBN: 978-1-1234-7890-2009.
- 5.22. D. Popescu, C. Dimon, C. Petrescu, Control and Optimization for Steel Plant Preheating Installations, Proceedings of the 17<sup>th</sup> IFAC World Congress ,Seul, Korea, p. 1964-1969. ISBN: 978-1-1234-7890-2/08.
- 5.23. C. Lupu, D. Popescu, C. Petrescu - *Control Method for Nonlinear Multivariable Process* - ICCC'2008, The 9th International Carpathian Control Conference , 25-28 May, Sinaia, Romania, pp. 374-379, ISBN 978-973-746-897-0.
- 5.24. I.Tache, D.Popescu, Fractal Dimention for the Analysis of Vascular Diseasis, CSCS 20 Bucharest, 2015.
- 5.25. C.Sandu, D.Popescu, Blood Pressure Regulation, CSCS 20- IAFFA Workshop, Bucharest, 2015.
- 5.26. C.Sandu, D.Popescu, Polynomial RST Control for Blood Pressure Regulation, CSCS 20 Bucharest, 2015.

## **6. Articles published in other Conference Proceedings**

- 6.1. C. Dimon, G. Dauphin-Tanguy, D. Popescu, I.A. Tache, Numerical Control for Hydrodynamic Traffic Flow Models, IEEE Proceedings of the 1st International Conference on Systems and Computer Science (ICSCS 2012), Villeneuve d'Ascq, France, 2012.
- 6.2. C. Dimon, G. Dauphin-Tanguy, D. Popescu, Modeling, control and robustness analysis for a road sector, 5<sup>th</sup> IFAC Conference on Management and Control of Production and Logistics (IFAC MCPL 2010), Coimbra, Portugal, 2010.
- 6.3. C. Lupu, D. Popescu, A. Udrea, C. Dimon, Design Procedure for Nonlinear Multivariable Processes Control, The 9th International Conference on Automation and Information (WSEAS ICAI 2008), pp. 362-367, București, România, 2008.
- 6.4. Dumitru Popescu, Catalin Petrescu, Ciprian Lupu, Catalin Dimon, Commande et optimisation des installations de chauffage de l'air dans une aciérie, Conférence Internationale Francophone d'Automatique CIFA2008, Bucuresti, Romania, September 3-5, 2008, Bucharest, Romania.
- 6.5. Dumitru Popescu, Messaouda Azzouzi, Optimisation d'un réacteur de pyrolyse par le logiciel SISCON, Conférence Internationale Francophone d'Automatique CIFA2008, Bucuresti, Romania, September 3-5, 2008, Bucharest, Romania.

- 6.6. Tudor-Bogdan Airimitoiaie, Dumitru Popescu, Catalin Dimon, Sabin Stamatescu, Robust control in real time applications, 1st IFAC/ACCA International Workshop on Logistics, December 9-10, 2008, Santiago, Chile.
- 6.7. D.Popescu, A.Fanea, Fault detections and diagnosis for industrial processes, IFAC SSC Conference, Brazil, 2007.
- 6.8. Tudor-Bogdan Airimitoiaie, Dumitru Popescu, Catalin Dimon, Robust control and optimization for thermo-energetic installations, IFAC Workshop on Control Applications of Optimizations, 6-8 May 2009, University of Jyväskylä, Agora, Finland.
- 6.9. E. Cimpoesu, B. Ciubotaru, D. Popescu, Model Following with Output Feedback for Fault Tolerant Control, ICSTCC15, Sinaia, 2011.
- 6.10. D. Popescu, M. Mircioiu, A. Moise, Numerical Control for Petrochemical Installations, ICSTCC15, Sinaia, 2011.
- 6.11. C. Bara, D. Popescu, Knowledge database model and inference mechanism for SCADA development expert system integrated in a CAD tool, INCOM12, Bucuresti, 2012.
- 6.12. S. Medianu, M. Mircioiu, D. Popescu, Supervisory Control for Ethylene Production in Petrochemical Installations, INCOM12, Bucuresti, 2012.
- 6.13. C. Lupu, D. Popescu, R. Gyrodi, Some Considerations about the Simplification of Simulation Procedures: Real Time Algorithms Switching Case Study, INCOM12, Bucuresti, 2012.
- 6.14. E. Cimpoesu, B. Ciubotaru, D. Popescu, Application Example of Model Following in Aircraft Fault Tolerant Control, CSCS18, Bucuresti, 2011.
- 6.15. C. Bara, D. Popescu, C. Lupu, Expert System for Generating SCADA Configurations with Practical Applications in Naval Industry, CSCS18, Bucuresti, 2011.
- 6.16. D. Popescu, C.Dimon, G.D.Tanguy, Modelarea si Controlul Traficului Urban, Abordare Macroscopica, Revista Analele AOSR, 2014.
- 6.17. C.Lupu, D.Popescu, Load Balancing Structure for Multiple Sources Systems, Revista Analele AOSR, 2014.
- 6.18. D.Popescu, C.Dimon, Tehnici Avansate de Conducere in TR a Proceselor Industriale, Sesiunea Stiintifica a AOSR, mai 2016, Revista Analele AOSR, 2016.
- 6.19. S.Carstoiu, D.Popescu, S.Olteanu, Tehnici Avansate de Conducere in TR a Proceselor Industriale, Sesiunea Stiintifica a AOSR mai 2016, Bucuresti, Revista Analele AOSR 2016.

### **List of research contracts and grants (selection, 2000-2016)**

1. Digital Control Systems for TR–SINAPSE Applications, program INOVARE, 216/2008-2011, project director
2. Resarcj Platfor, ”Advanced Control and New Information Technologies”- UMING 2000, CNFIS- World Bank, CANTI , Contract no. 242, 2008-2011, project director
3. Project RELANSIN – CONTE , no. 1665/2003-2005, project director
4. Project CONCORD-POSDRU/ 90/2.1/S/58108/ 2004-2008, project director
5. Project TRIPOD-POSDRU 90/2.1/S/58108/2008-2012, project director

6. Project CATIIS-POSDRU 21/1.5/G/32379/, project director
7. Project HARTH-PN2/UEFISCDI/130/2012/2012-2016, project director
8. Project Energylife-POSCCE/1/2008/ID 1445/42557/2013-2016, project director
9. Project IDEI – Contract 1044/2010, project director
10. EU FP 7 Project ERRIC, REPOT-2010-1, no. 264207, 2010-2014, coordinator WP6

## **Patents**

1. Patent no. A/00932, 2-11-2016, "Digital system for the compensation of the renewable energy consumption in intelligent electric networks"(D. Popescu, A. Ticlea, C. Petrescu )

10.01. 2017

Prof.Dr.Eng. Dumitru Popescu