

Lista completă de lucrari publicate

- Conf.dr.ing. Marian BARBU -

A. TEZA DE DOCTORAT

Barbu M., 2006, *Contribuții privind conducerea automată a proceselor biotehnologice*, Universitatea "Dunărea de Jos" din Galați, Conducător de doctorat: Prof.dr.ing. Emil Ceangă. **Titlul de Doctor în Domeniul Automatică**, obținut în baza Ordinului Ministrului Educației și Cercetării Nr. 632 din 21.03.2007.

B. CĂRȚI ȘI CAPITOLE ÎN CĂRȚI

1. Tebbani S., Titica M., Ifrim G., **Barbu M.**, Caraman S., *Optimal Operation of a Lumostatic Microalgae Cultivation Process*, in: *Developments in Model-Based Optimization and Control: Distributed Control and Industrial Applications*, Springer, ISBN: 978-3-319-26685-5, pp. 209-235, 2015.

2. **Barbu M.** and Caraman S., Capitol 27: *QFT Robust Control of Wastewater Treatment Processes*, in: *Robust Control, Theory and Applications*, Edited by Andrzej Bartoszewicz, ISBN 978-953-307-229-6, Hard cover, 678 pages, Publisher: InTech, Published: April 11, 2011, DOI: 10.5772/619

3. Badea N., **Barbu M.**, *Experimental Case Study*, in *Design for Micro-Combined Cooling, Heating and Power – Stirling Engines and Renewable Power Systems*, Nicolae Badea – Editor, Ed. Springer, ISBN 978-1-4471-6253-7, ISBN 978-1-4471-6254-4 (eBook), 2014.

4. Badea N., Epureanu A., Ceangă E., **Barbu M.**, Caraman S., *Functional Design of the mCCHP-RES System*, in *Design for Micro-Combined Cooling, Heating and Power – Stirling Engines and Renewable Power Systems*, Nicolae Badea – Editor, Ed. Springer, ISBN 978-1-4471-6253-7, ISBN 978-1-4471-6254-4 (eBook), 2014.

5. **Barbu M.**, *Conducerea automata a proceselor biotehnologice*, Galati University Press, ISBN 978-606-8008-29-5, 2009.

6. **Barbu M.**, Caraman S., *Modelarea, Simularea și Controlul Bioprocetelor*, Galati University Press, ISBN 978-606-8008-41-7, 182 pag.

7. Caraman S., **Barbu M.**, *Modelarea și conducerea proceselor biotehnologice. Lucrări practice. Volumul 2: Conducerea automată a proceselor biotehnologice*. Editura CERMI Iași, ISBN: 973-627-240-0; 973-973-667-267-7, 2007.

8. Caraman S., **Barbu M.**, *Modelarea și conducerea proceselor biotehnologice. Lucrări practice. Volumul 1: Modelarea și estimarea stării și parametrilor proceselor biotehnologice*, Editura Fundatiei Universitatii Dunarea de Jos din Galati, ISBN 973-627-240-0, 2005.

9. Caraman S., **Barbu M.**, Cârstoiu, D., *Sisteme bazate pe cunoștințe în conducerea proceselor*, Editura Fundatiei Universitatii Dunarea de Jos din Galati, ISBN 973-627-203-6, 2005.

10. Caraman S., **Barbu M.**, *Sisteme de conducere bazate pe microprocesoare*, Editura Fundatiei Universitatii Dunarea de Jos din Galati, ISBN: 973-627-028-9, 2003.

C. ARTICOLE/STUDII ÎN EXTENSO PUBLICATE ÎN REVISTE DIN FLUXUL ȘTIINȚIFIC INTERNAȚIONAL PRINCIPAL

Articole în reviste cotate ISI

1. Ifrim G., Titica M., **Barbu M.**, Boillereaux L., Cogne G., Caraman S., Legrand J., Multivariable feedback linearizing control of *Chlamydomonas reinhardtii* photoautotrophic growth process in a torus photobioreactor, *Chemical Engineering Journal*, Vol. 218, Pp. 191-203, 2013.
2. Vlad C., Sbarciog M., **Barbu M.**, Caraman S., Vande Wouwer A., Indirect Control of Substrate Concentration for a Wastewater Treatment Process by Dissolved Oxygen Tracking, *Control Engineering and Applied Informatics*, Vol. 14, Is. 1, Pp. 37-47, 2012.
3. Carp D., **Barbu M.**, Evaluation Of Control Techniques Applied On A Wastewater Treatment Process With Activated Sludge, *Environmental Engineering and Management Journal*, Vol. 13, No. 8, pp. 1979-1985, 2014.
4. **Barbu M.**, Experimental results regarding the operating regimes of trickling filters in recirculating aquaculture systems, *Fresenius Environmental Bulletin*, Vol. 21, No. 11c, Pp. 3500-3506, 2012.
5. **Barbu M.**, Ionescu T., Ifrim G., Caraman S., Cristea V., Ceanga E., Results Regarding the Water Quality Control in Recirculating Aquaculture Systems, *Journal of Environmental Protection and Ecology*, Vol. 13, Is. 1, Pp. 39-47, 2012.
6. **Barbu M.**, Caraman S., Bahrim G., Carp D., Results regarding the control of the dissolved oxygen concentration in wastewater treatment processes, *Romanian Biotechnological Letters*, Vol. 16, Is. 2, Pp. 6096-6104, 2011.
7. **Barbu M.**, Caraman S., Ifrim G., Bahrim G., Ceanga E., State Observers for Food Industry Wastewater Treatment Processes, *Journal of Environmental Protection and Ecology*, Vol. 12, Is. 2, Pp. 678-687, 2011.
8. Caraman S., **Barbu M.**, Ionescu T., Ifrim G., Cristea V., Ceanga E., The analysis of the dynamic properties of the wastewater treatment process in a recirculating aquaculture system, *Romanian Biotechnological Letters*, Vol. 15, Is. 4, Pp. 5457-5466, 2010.
9. Palela M., Ifrim G., **Barbu M.**, Bahrim G., Caraman S., Strategies for the Aerobic Biological Treatment of the Dairy Wastewaters in Controlled Conditions, *Environmental Engineering and Management Journal*, Vol. 9, Is. 3, Pp. 399-405, 2010.
10. **Barbu M.**, Caraman S., Ceanga E., Optimal Control Strategy of a Biotechnological Process Using a Fuzzy Zonal Model, *Romanian Biotechnological Letters*, Vol. 13, Is. 5, Pp. 29-38, 2008.
11. **Barbu M.**, Caraman S., Ceanga E., A Modified ASM3 Model for a Trickling Filter, *Romanian Biotechnological Letters*, Vol. 13, Is. 5, Pp. 39-48, 2008.
12. Caraman S., Sbarciog M., **Barbu M.**, Predictive control of a wastewater treatment process, *International Journal of Computers Communications & Control*, Vol. 2, Is. 2, Pp. 132-142, 2007

D. PUBLICAȚII ÎN EXTENSO APĂRUTE ÎN LUCRĂRI ALE PRINCIPALELOR CONFERINȚE INTERNAȚIONALE DE SPECIALITATE

I. Articole în conferințe internaționale indexate ISI

1. Badea N., Ceanga E., Caraman S., **Barbu M.**, Numerical simulation of the conceptual model for mCCHP-Stirling Engine based on renewable energy sources, *9th International Conference*

on *System Science and Simulation in Engineering*, Iwate, Japan, 2010.

2. Caraman S., **Barbu M.**, The identification and robust control of a biological wastewater treatment process, *International Conference on Automation, Quality and Testing, Robotics (AQTR 2008)*, Cluj Napoca, 2008.
3. Caraman S., **Barbu M.**, Dumitrascu G., Wastewater treatment process identification based on the calculus of state variables sensibilities with respect to the process coefficients, *International Conference on Automation, Quality and Testing, Robotics (AQTR 2006)*, Cluj Napoca, 2006.
4. **Barbu M.**, Caraman S., Ceanga E., Bioprocess control using a recurrent neural network model, *Joint Conference of the 20th IEEE International Symposium on Intelligent Control/13th Mediterranean Conference on Control and Automation*, Limassol, Cyprus, 2005.
5. Carp D., **Barbu M.**, Ceanga E., Vilanova R., Process Control Engineering Considerations on the Application of Virtual Reference Feedback Tuning Method, *17th International Conference On System Theory, Control And Computing (ICSTCC)*, Sinaia, Octombrie 2013.
6. Carp D., **Barbu M.**, Mînz V., Robust Control of an Activated Sludge Wastewater Treatment Process, *17th International Conference On System Theory, Control And Computing (ICSTCC)*, Sinaia, Octombrie 2013.
7. Carp D., **Barbu M.**, Mînz V., Network Discharge Control Using a Fuzzy Logic Approach, *4th International Symposium On Electrical And Electronics Engineering (ISEEE)*, Galați, Octombrie 2013.
8. Murariu G., Timofti M., Popa P., Georgescu L., **Barbu M.**, Popescu A.A., Statistical and dynamical models on the Prot River state parameters. Monitoring area - Galati, Romania case study, *2013 4th International Symposium On Electrical And Electronics Engineering (ISEEE)*, Galați, Octombrie 2013

II. Articole în conferințe internaționale indexate SCOPUS

1. **Barbu M.**, Ceanga E., Fractional order controllers for urban wastewater treatment systems, *23rd Mediterranean Conference on Control and Automation, MED 2015*, June 2015.
2. **Barbu M.**, Ceanga E., Robust resonant controllers for wastewater treatment systems, *18th International Conference on System Theory, Control and Computing, ICSTCC 2014*, Sinaia, Octombrie 2014.
3. **Barbu M.**, Ceanga E., A data-driven approach for the design of feedback controllers, *18th International Conference on System Theory, Control and Computing, ICSTCC 2014*, Sinaia, Octombrie 2014.
4. Luca L., **Barbu, M.**, Caraman S. , Modelling and performance analysis of an urban wastewater treatment plant, *18th International Conference on System Theory, Control and Computing, ICSTCC 2014*, Sinaia, Octombrie 2014.
5. Minzu V., **Barbu M.**, Costache M.C., Sewer network discharge control using a multiagent approach, *18th International Conference on System Theory, Control and Computing, ICSTCC 2014*, Sinaia, Octombrie 2014.
6. Vlad C., Mînz V., **Barbu M.**, Gain scheduling control for wind energy conversion optimization, *16th International Conference on System Theory, Control and Computing, ICSTCC 2012 - Joint Conference Proceedings*, Sinaia, 2012.

7. **Barbu M.**, Caraman S., Vlad C., Nicolau T., Ceangă E. , Hierarchical control system for recirculating aquaculture processes, *16th International Conference on System Theory, Control and Computing, ICSTCC 2012 - Joint Conference Proceedings*, Sinaia, 2012.
8. Carp D., **Barbu M.**, Caraman S., Robust state observers for biological wastewater treatment processes with activated sludge, *16th International Conference on System Theory, Control and Computing, ICSTCC 2012 - Joint Conference Proceedings*, Sinaia, 2012.
9. Vlad C., Caraman S., Carp D., Minzu V., **Barbu M.**, Gain Scheduling control of dissolved oxygen concentration in a wastewater treatment process, *20th Mediterranean Conference on Control and Automation, MED 2012 - Conference Proceedings* , Barcelona, 2012.
10. **Barbu M.**, Mînză V., Carp D., Ceangă E., Identification and sensitivity analysis of a trickling biofilter viewed as a distributed parameters system, *15th International Conference on System Theory, Control and Computing, ICSTCC 2011*, Sinaia, 2011.
11. Chiroșcă A., Dumitrașcu G., **Barbu M.**, Caraman S., Fuzzy control of a wastewater treatment process, *Smart Innovation, Systems and Technologies 10 SIST*, Grecia, 2011.
12. **Barbu M.**, Ifrim G., Caraman S., Bahrim G., QFT control of dissolved oxygen concentration in a wastewater treatment pilot plant, *IFAC Computer Applications in Biotechnology*, 2010.
13. **Barbu M.**, Caraman S., QFT Multivariable Control Of A Biological Wastewater Treatment Process Using ASM1 Model, *10th IFAC Symposium on Computer Applications in Biotechnology*, Cancun, 2007.
14. **Barbu M.**, Caraman S., Design Of A Sliding-Mode Observer For A Biotechnological Process, *10th IFAC Symposium on Computer Applications in Biotechnology*, Cancun, 2007.
15. **Barbu M.**, Caraman S., Ceangă E., QFT robust control of a wastewater treatment process, *IFAC World Congress*, Prague, 2005.

E. Articole în alte conferințe internaționale de amploare

1. Caraman S., **Barbu M.**, Munteanu C., Expert System Based on Fuzzy Rules for Alpha-amylase Production with *Bacillus subtilis*, *9th IFAC Symposium Computer Applications in Biotechnology – CAB 9*, Leuven, 2004
2. Caraman S., Frangu L., Ceanga E., **Barbu M.**, Neuro-fuzzy Control of Microorganisms Mean Age in Biotechnological Processes, *10th Mediterranean Conference on Control and Automation - MED2002*, Lisabona, 2002.
3. **Barbu M.**, Barbu G., Ceanga E., The Multi-model Control of the Wastewater Treatment Process with Activated Sludge, *12th Mediterranean Conference on Control and Automation- MED'04*, Kusadasi, 2004.
4. **Barbu M.**, Ceanga E., Caraman S., Self-tuning of PI Controllers Using Fuzzy Techniques, *11th Mediterranean Conference on Control and Automation - MED2003*, Rhodes, 2003.
5. **Barbu M.**, Ceanga E., Gheorghiu C., Real Time Supervising Modeling of a Continuous Casting Mold Using Artificial Intelligence Techniques, *11th Mediterranean Conference on Control and Automation - MED2003*, Rhodes, 2003.
6. Vlad C., Burlibașa A, Munteanu T, Gurguiatu G. and **Barbu M.**, Test rig for stand-alone small power wind turbine emulation for variable wind and Load, *International Conference on Renewable Energies and Power Quality (ICREPQ'13)*, Bilbao, 2013
7. **Barbu M.**, Ifrim G., Ceangă E., Caraman S., Modelling of a multipurpose biotechnological plant in view of automatic control. Process modelling and control properties analysis, *19th*

International Conference on System Theory, Control and Computing, ICSTCC 2015, Cheile Grădiștei, Octombrie 2015.

8. Ifrim G., **Barbu M.**, Ceangă E., Caraman S., Modeling and control of a multipurpose biotechnological plant. Photobioreactor modeling, *19th International Conference on System Theory, Control and Computing, ICSTCC 2015*, Cheile Grădiștei, Octombrie 2015.

9. Precup R.E., Bojan-Dragoș C.A., **Barbu M.**, Caraman S., Fuzzy control of an anaerobic digestion process, *19th International Conference on System Theory, Control and Computing, ICSTCC 2015*, Cheile Grădiștei, Octombrie 2015.

10. Pătrașcu A, Necoară I, **Barbu M.**, Caraman S., Implementable fast augmented Lagrangian optimization algorithm with application in embedded MPC, *19th International Conference on System Theory, Control and Computing, ICSTCC 2015*, Cheile Grădiștei, Octombrie 2015.

11. Mînză V., **Barbu M.**, Nechita C., A Binary Hybrid Topology Particle Swarm Optimization algorithm for sewer network discharge, *19th International Conference on System Theory, Control and Computing, ICSTCC 2015*, Cheile Grădiștei, Octombrie 2015.

12. Luca L., **Barbu M.**, Ifrim G., Caraman S., Analysis of phosphorus removal performances in a municipal treatment plant, *19th International Conference on System Theory, Control and Computing, ICSTCC 2015*, Cheile Grădiștei, Octombrie 2015.

13. Caraman S., Ifrim G., Ceanga E.; **Barbu M.**, Titica M., Precup R.E., Extremum seeking control for an anaerobic digestion process, *19th International Conference on System Theory, Control and Computing, ICSTCC 2015*, Cheile Grădiștei, Octombrie 2015.

F. ALTE LUCRĂRI

1. Caraman S., **Barbu M.**, Ceanga E., Robust multimodel control using QFT techniques of a wastewater treatment process, *Control Engineering and Applied Informatics*, Vol. 7, Is. 2, Pp. 10-17, 2005.

2. **Barbu M.**, Caraman S., Ceanga E., Stochastic Estimation Techniques for Biotechnological Processes, *Control Engineering and Applied Informatics*, Vol. 6, Is. 4, Pp. 43-51, 2004.

3. Caraman S., **Barbu M.**, Mean Age Control Strategies Techniques of the Continuous and Discontinuous Biosynthesis Processes. Comparative Study, *Control Engineering and Applied Informatics*, Vol. 5, Is. 2, Pp. 34-39, 2003.

4. Caraman S., **Barbu M.** and Arinton E, The Linearizing Control Of A Wastewater Treatment Process With The Removal Of Two Substrates, *Annals Of The University Of Craiova, Series: Automation, Computers, Electronics And Mechatronics*, Vol. 4(31), No. 1, Pp. 35-40, 2007.

5. Caraman S., **Barbu M.**, Mînză V., Badea N. Ceangă E., Modelling and Control of an Autonomous Energetic System Obtained through Trigeneration - *Buletinul Institutului Politehnic Din Iași, Universitatea Tehnică, „Gheorghe Asachi” din Iași*, Tomul LVI (LX), Fasc. 4, Secția Automatică Și Calculatoare, Pp. 43-51, 2010

6. Ifrim G., **Barbu M.**, Titica M., Boillereaux L., Caraman S., Control of the Microalgae Photosynthetic Growth in a Torus Photobioreactor, *Annals Of The University Of Craiova, Series: Automation, Computers, Electronics And Mechatronics*, Vol. 4(31), No. 1, Pp. 32-38, 2012

7. **Barbu M.**, Caraman S., Liga V., Nicolau T., Ceanga E., Modelling and numerical simulation of the flocculation process, *Innovative Romanian Food Biotechnology*, Vol. 7, Pp. 49-54, 2010.

8. **Barbu, M.**, Caraman, S., Ceanga, E., Biotechnological Processes Identification Using Dynamic Neural Network, *1st Romanian-Hungarian Joint Symposium on Applied Computational Intelligence, SACI 2004*, Timisoara, Proceedings ISBN 963-7154-26-4, Pp. 11-20, 2004.
9. **Barbu, M.**, Caraman, S., Ceanga, E., Control Strategies of a Multivariable Wastewater Treatment Process. Comparative Study, *Workshop on Modeling and Control of Complex Systems*, Ayia Napa, Cyprus, June 30 – July 1, 2005.
10. Vlad C., Sbarciog M.I., **Barbu M.**, Linear predictive control of a wastewater treatment process, *The Annals of 'Dunarea de Jos' University of Galati, Fascicle III: Electrotechnics, Electronics, Automatic Control, Informatics*, Vol. 34, No. 1, Pp. 15-20, 2011.
11. **Barbu M.**, Caraman S., *Fuzzy models for alpha-amylase biosynthesis process with Bacillus Subtilis*, The 4th Symposium on Process Control (SPC'2003), Ploiesti, 2003.
12. Roman N., Alexiu M.G., Caraman S., **Barbu M.**, Bivol I., Ceanga E., Adaptive Filter Used as a Dynamic Compensator in Automatic Gauge Control of Strip Rolling Processes, *The Annals of 'Dunarea de Jos' University of Galati, Fascicle III: Electrotechnics, Electronics, Automatic Control, Informatics*, Vol. 33, No. 1, 2010.

21.12.2015

Conf.dr.ing. Marian BARBU