# RAPORT ACTIVITATE [1]

(2017)

## 1. Datele de identificare ale unității de cercetare

1.1. Denumirea[2]: Sisteme de conducere automată a proceselor - SCAP

1.2. Document de înființare și anul de înființare: Ceritificat de înființare acordat de CNCSIS nr. 35/CC-C 2001

1.3. Adresa: Universitatea "Dunărea de Jos" din Galați, Facultatea de Automatică, Calculatoare, Inginerie Electrică și Electronică, Galați, str. Științei, nr. 2, cod 800146, corp Y.

1.4. Telefon, fax, pagina web, e-mail:

Tel: +40-336-130 298,
Fax: + 40-336-130 298 / + 40-336-130 299
http://www.scap.ugal.ro
Sergiu.Caraman@ugal.ro

## 2. Scurta prezentare

2.1. Regulament de org. și funcționare[3]: Hotarare de senat Nr. 71/iulie, 2017

2.2. Domeniul fundamental/ramura de știința[4]:

2.3. Corespondența activității CDI cu domeniile de specializare inteligentă pentru ciclul strategic 2014-2020[5]:

Tehnologia informatiei si a comunicatiilor. Spatiu si securitate

Energie, mediu si schimbari climatice

2.4. Directii de cercetare-dezvoltare/obiective de cercetare/priorități de cercetare

a. domenii principale de cercetare-dezvoltare-inovare

b. domenii secundare de cercetare-dezvoltare-inovare

c. servicii / microproductie

2.5. Teme de cercetare dezvoltate[6]:

În cadrul centrului de cercetare SCAP sunt definite două direcții de cercetare, după cum urmează:

1. Conducerea proceselor neliniare (modelarea, estimarea stării și controlul proceselor de tratare biologică a apelor reziduale, conducerea și identificarea proceselor neliniare);

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[1] La Raportare se va avea in vedere doar activitatea deșfașurată de membrii titulari (Mt) ai UC

[2] Inclusiv acronim.

[3] Se specifică numărul Hotărârii de Senat și data aprobării

[4] In acord cu HOTĂRÂREA Nr. 140/2017 din 16 martie 2017 privind aprobarea Nomenclatorului domeniilor și al specializărilor/programelor de studii universitare și a structurii instituțiilor deînvățământ superior pentru anul universitar 2017 - 2018

[5] În acord cu STRATEGIA NAȚIONALĂ DE CERCETARE, DEZVOLTARE ȘI INOVARE 2014 – 2020, https://www.edu.ro/sites/default/files/_fi%C8%99iere/Minister/2016/strategii/strategia-cdi-2020_-proiect-hg.pdf

[6] Se vor nominaliza temele relevante, dezvoltate prin contracte de cercetare.

2. Optimizări discrete (Conducerea şi optimizarea proceselor cu evenimente discrete).

Obiectivele activităţii de cercetare ştiinţifică desfăşurată în cadrul centrului de cercetare:

- dezvoltarea unei resurse umane înalt calificată în domeniul Ingineriei Sistemelor;
- dezvoltarea infrastructurii de cercetare în domeniul Ingineriei Sistemelor;
- dezvoltarea de cercetări interdisciplinare (biotehnologii, robotică);
- dezvoltarea de parteneriate cu instituţii de cercetare naţionale şi internaţionale;
- organizarea de evenimente ştiinţifice;
- îmbunătăţirea activităţilor didactice prin introducerea rezultatelor cercetării validate de comunitatea academică naţională şi internaţională.

**3. Structura de conducere a UC**

3.1. Responsabil - Prof. dr. ing. Sergiu CARAMAN

3.2. Consiliul de coordonare - Prof. dr. ing. Viorel. Mînzu, Prof. dr. ing. Marian Barbu.

**4. Structura resursei umane**

**Numărul total de membri - 12, din care:**

a. Număr membri titulari[7]: 12

b. Număr membri asociaţi: -

c. Conducători de doctorat[8]: 3

d. Număr de tineri cercetatori (postoctoranzi, doctoranzi, masteranzi etc): 3

e. Număr ingineri/tehnicieni: -

**5. Infrastructura de cercetare-dezvoltare, facilităţi de cercetare**

5.1. Laboratoare[9]

1. Sisteme de control a proceselor biotehnologice APEPUR
2. Sisteme de control a proceselor nelinire SISCONTROL

5.2. Echipamente, instalaţii şi software de interes naţional pentru cercetare fundamentală, dezvoltare tehnologică şi inovare[10]

- Lista echipamentelor laboratorului **APEPUR**: Fotobioreactor - Stand de laborator - Experimente privind modelarea si controlul proceselor de obtinere a biomasei algale;
- Lista echipamentelor laboratorului **SISCONTROL**:

1. Linie flexibilă de asamblare Hera - Testarea algoritmilor de optimizare pentru sisteme discrete,
2. Vehicul autonom electric cu 2 roti motoare - Testarea algorithmilor de conducere neliniara,
3. Structura de manipulator cu 7 grade de libertate - Testarea algorithmilor de conducere neliniara,

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[7] Numai pe baza adeziunii aprobate de Responsabilul UC

[8] Nume, prenume, domeniul de doctorat.

[9] Se vor nominaliza laboratoarele, responsabilul si principale direcţiile de cercetare.

[10] Se se vor enumera numai acele laboratoare si acele echipamente care au fost folosite in activitatea de cercetare din ultimii 2 ani); Se vor nominaliza echipamentele achiziţionate în anul 2017.

4. Scaun mobil electric pentru persoane cu dezabilitati - Testarea algoritmilor de conducere avansata,
5. Sistem de evitare a obstacolelor (de tip laser) - Achizitia de informatii din mediul ambient,
6. Structura hardware si software pentru conducerea scaunului cu rotile - Implementarea in timp real a algoritmilor de optimizare si control a proceselor neliniare,
7. Sistem pneumatic de actionare FESTO - Testarea algoritmilor de identificare si control a sistemelor neliniare.

## 6. Contracte de cercetare derulate[11]

6.1. Contracte câştigate în competiţii:
- internaţionale -
- naţionale: 2

6.2. Contracte cu agenţi economici:
- din străinătate -
- din ţară -

## 7. Finanţarea UC din fonduri proprii UDJG[12]: -

## 8. Rezultatele activităţii de cercetare, dezvoltare şi inovare (CDI)

8.1.Rezultate ale activităţii CDI (cercetare fundamentala şi aplicativă)[13]

| | | Nr. |
|---|---|---|
| **8.1.1** | Lucrări publicate în reviste cotate ISI, ISI Proceedings | 21 |
| **8.1.2** | Factor de impact cumulat al lucrărilor cotate ISI | 17,157 |
| **8.1.3** | Citări în reviste de specialitate cotate ISI | 35 |
| **8.1.4** | Lucrări ştiinţifice/tehnice in reviste indexate în baze de date internaţionale | 4 |
| **8.1.5** | Comunicări ştiinţifice prezentate la conferinţe internaţionale şi publicate în volumele acestora | 19 |
| **8.1.6** | Comunicări ştiinţifice prezentate la conferinţe naţionale şi publicate în volumele acestora | - |
| **8.1.7** | Brevete de invenţie (solicitate / acordate) | - |
| **8.1.8** | Citări în sistemul ISI ale lucrărilor de cercetare/ brevete | - |
| **8.1.9** | Produse/servicii/tehnologii rezultate din activităţi de cercetare, bazate pe brevete, omologări sau inovaţii proprii. | - |
| **8.1.10** | Studii prospective şi tehnologice, normative, proceduri, metodologii şi planuri tehnice, noi sau perfecţionate, comandate sau utilizate de | 2 |

[11] Se vor atasa liste pe categorii care să cuprindă următoarele detalii: nr. contract, titlu, domeniul (care se inscrie in lista domeniilor de cercetare declarate ale UC) de cercetare, director, parteneri (daca este cazul), valoare totala si valoarea regie şi valoarea din regie care a fost solicitata pentru intretinerea UC.
[12] Se va specifica valoarea finanţarilor şi destinaţia acestora.
[13] Se vor anexa lista acestor contribuţii.

| | | |
|---|---|---|
| | beneficiar. | |

8.2. Teze de doctorat finalizate şi în derulare[14]: 4

- In derulare 3 (în derulare, Baicu Laurentiu, Miron Mihaela, Luca Laurentiu),

- Finalizata 1 - Şerbencu Adrian.

8.3. Oportunităţi de valorificare a rezultatelor CDI

8.4. Rezultate ale activităţii CDI valorificate şi efectele obţinute

**9. Măsuri privind creşterea capacităţii activităţii CDI**

- Atragerea de noi membrii în Centrul de cercetare SCAP, în special tineri (masteranzi şi doctoranzi).
- Participarea la competiţii de atragere de fonduri de cercetare (proiecte de cercetare naţionale şi internaţionale).
- Încheierea de noi parteneriate de cercetare cu unităţi de cercetare din alte tări.
- Participarea în consorţii de cercetare cu unităţi de cercetare cu largă vizibilitate internaţională.

Diversificarea direcţiior de cercetare în cadrul centrului.

**10. Măsuri pentru creşterea prestigiului şi a vizibilităţii UC[15]**

10.1. Dezvoltarea de parteneriate:

- dezvoltarea de parteneriate la nivel naţional şi internaţional (cu personalităţi/ instituţii / asociaţii profesionale) în vederea participării la programele naţionale şi europene specifice; se continua colaborarile cu **Universitatea din Nantes St. Nazaire, Franta,** si cu **Universitatea Politehnica din Mons Belgia**
- înscrierea Centrului de cercetare în baze de date internaţionale care promovează parteneriatele; Erris (Registry of Romanian Research Infrastructures, the booking gate for research infrastructures, research & technological services.)
- înscrierea Centrului de cercetare în reţele de cercetare/asociaţii profesionale de prestigiu pe plan naţional/internaţional;
- vizte in cadrul centrului ale unor specialisti in domeniile de interes;
- asigurarea de stagii de cercetare pentru specialişti din ţară şi străinătate;
- membrii în colectivele de redacţie ale revistelor recunoscute ISI ( sau incluse în baze internaţionale de date) şi în colective editoriale internaţionale şi/sau naţionale;
- Prof.dr.ing. Sergiu Caraman - Referent stiintific la revista - *Journal of Control Engineering and Applied Informatics* (CEAI), ISSN 1454-8658 (ISI Impact Factor 2016: 0.695).
- Prof.dr.ing. Viorel Minzu - Referent stiintific la revista - *Engineering Applications of Artificial Intelligence*, ISSN: 0952-1976, eISSN: 1873-6769 (2016 Impact Factor: 2.894).

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[14] Se va anexa lista tezelor de doctorat în derulare, cu specificarea titlului, domeniul de doctorat, nume doctorand, nume conducator de doctorat.

[15] Se va descrie detaliat fiecare acţiune realizată.

- Prof.dr.ing. Marian Barbu - Referent stiintific la revista - *Chemical Product and Process Modeling* (CiteScore 2016: 0.94).
- Prof.dr.ing. Marian Barbu - Referent stiintific la revista - *Bioresources*, ISSN: 1930-2126 (2016 Impact Factor 1.321).
- Prof.dr.ing. Marian Barbu - Referent stiintific la revista - *Control and Cybernetics*, ISSN: 0324-8569 (2010 Impact Factor 0.33).
- Prof.dr.ing. Marian Barbu - Referent stiintific la revista - *Chemical Engineering Journal*, ISSN: 1385-8947, eISSN: 1873-3212 (2016 Impact Factor: 6.216).
- Conf.dr.ing. Daniela Cernega - Referent stiintific la revista - *Nonlinear Dynamics*, SSN: 0924-090X (print version), ISSN: 1573-269X (electronic version), (ISI Impact Factor 2016: 3.464).
- S.l.dr.ing. Razvan Solea – Referent stiintific la revista - *IEEE Transactions on Intelligent Transportation Systems,* ISSN: 1524-9050 (ISI Impact Factor 2016: 3.724).
- S.l.dr.ing. Razvan Solea – Referent stiintific la revista - *International Journal of Advanced Robotic Systems,* ISSN: 17298814 (2016 Impact Factor: 0.987).
- Prof.dr.ing. Marian Barbu - Referent stiintific la revista - *Intelligent Industrial Systems*. Springer, ISSN: 2363-6912 (print version), ISSN: 2199-854X (electronic version).
- Prof.dr.ing. Sergiu Caraman - Membru al subcomitetului tehnic IFAC – Bioprocess and bioengineering.
- IFAC TC 5.1 Manufacturing Plant Control: Cernega Daniela
- IFAC TC 5.2 Manufacturing Modelling for Management and Control: Minzu Viorel

10.2. Prezentarea rezultatelor la târgurile și expozițiile naționale și internaționale;

- târguri și expozitii internaționale;
- târguri și expoziții naționale.

10.3. Premii obținute prin proces de selecție/distincții, etc.

10.4. Prezentarea activitătii de mediatizare:

- extrase din presa (interviuri);
- participare la dezbateri radiodifuzate / televizate.

**11.Concluzii**

Data: 17.05.2018

Responsabil UC
Prof.dr.ing. Sergiu CARAMAN

# Raport centrul de cercetare Sisteme de Conducere

# Automată a Proceselor (SCAP)

# - 2017 -



## 6. Contracte de cercetare derulate

### 6.1. Contracte câștigate în competiții:

- internaționale:

- naționale:

1. Sistem de conducere avansata a unei instalatii de tip biorafinarie, Contract Nr. 269/2014 - BIOCON, Univ. „Dunarea de Jos" – coordonator (Director Prof. Caraman Sergiu)
2. Sistem de conducere avansata a unor bioprocese din industria alimentara, Nr. 211/2014 – ADCOSBIO, Univ. „Dunarea de Jos" din Galati – partener (Responsabil - Prof. Caraman Sergiu)

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### *8.1.1. Lucrări publicate în reviste cotate ISI, ISI-Proceedings*

1. I Santín, **M Barbu**, C Pedret, R Vilanova, *Control strategies for nitrous oxide emissions reduction on wastewater treatment plants operation*, Water research 125, 466-477.
2. **M Barbu**, R Vilanova, M Meneses, I Santin, *On the evaluation of the global impact of control strategies applied to wastewater treatment plants*, Journal of Cleaner Production 149, 396-405
3. Laurentiu Baicu, Laurentiu Frangu, **Sergiu Caraman**, Mihaela Miron, *Measurement of the biomass concentration from a bioprocess by image processing techniques*, ISEEE 2017 – The 5-th International Symposium on Electrical and Electronics Engineering, Galati, October 20-22, indexat IEEE Xplore.
4. Mihaela Miron, Laurentiu Frangu, **Sergiu Caraman**, *Fault Detection Method for a Wastewater Treatment Process based on a Neural Model*, ISEEE 2017 – The 5-th International Symposium on Electrical and Electronics Engineering, Galati, October 20-22, indexat IEEE Xplore.
5. **Laurentiu Luca, George Ifrim, Sergiu Caraman**, Emil Ceanga, Ignacio Santin, Ramon Vilanova, **Marian Barbu**, *Optimization of the Wastewater Treatment Processes Based on the Relaxation Method*, ISEEE 2017 – The 5-th International Symposium on Electrical and Electronics Engineering, Galati, October 20-22, indexat IEEE Xplore.
6. **Marian Barbu**, Emil Ceangă, Ramon Vilanova, **Sergiu Caraman, George Ifrim**, *Extremum-Seeking Control Approach Based on the Influent Variability for Anaerobic Digestion Optimization*, The 20th World Congress of the International Federation of

Automatic Control, IFAC 2017, Jul. 9-14, Toulouse, France, IFAC-PapersOnLine. 2017; 50(1): pp. 12623-12628.

7. **S. Caraman, M. Barbu, G. Ifrim**, M. Titica, E. Ceanga, *Anaerobic Digester Optimization Using Extremum Seeking and Model-Based Algorithms. A Comparative Study,* The 20th World Congress of the International Federation of Automatic Control, IFAC 2017, Jul. 9-14, Toulouse, France, IFAC-PapersOnLine. 2017; 50(1): pp. 12673-12678.
8. Mihaela Sbarciog, **George Ifrim, Sergiu Caraman**, Alain Vande Wouwer, *Multivariable Predictive Control of a Photobioreactor System*, ICCC 2017 – 18th International Carpathian Control Conference, Sinaia, Romania, 2017: 210-215, indexat IEEE Xplore.
9. Emil Petre, Dan Selişteanu, Dorin Şendrescu, **Marian Barbu, Sergiu Caraman**, *An Adaptive Control Structure for an Anaerobic Digestion Process with Unknown Inputs*, ICCC 2017 – 18th International Carpathian Control Conference, Sinaia, Romania, 2017, indexat IEEE Xplore.
10. **M Barbu**, R Vilanova, M Meneses, I Santin, *Global Evaluation of Wastewater Treatment Plants Control Strategies Including CO2 Emissions*, IFAC World Congress, IFAC-PapersOnLine 50 (1), 12956-12961
11. **M Barbu**, R Vilanova, I Santin, M Meneses, *Decentralized control strategies evaluation for an Integrated Urban Wastewater System*, Carpathian Control Conference (ICCC), 2017 18th International, 46-51
12. Ion Necoara; Andrei Patrascu; Dragos Clipici; **Marian Barbu**, *On convergence of inexact projection gradient method for strongly convex minimization*, 2017 21st International Conference on System Theory, Control and Computing (ICSTCC), Year: 2017 Pages: 506 - 511
13. Ciprian Vlad; Emil Ceangă; **Marian Barbu**; Ramon Vilanova, *Prediction techniques in control of energy micro-systems based on renewable sources*, 2017 21st International Conference on System Theory, Control and Computing (ICSTCC), Year: 2017 Pages: 803 – 808
14. R. Vilanova; C. Pedret; **M. Barbu**; O. Arrieta, *Event-based internal model control approach for frequency deviation control in islanded micro grid*, 2017 22nd IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), Year: 2017 Pages: 1 – 8
15. R. Vilanova; V. M. Alfaro; A. Visioli; **M. Barbu**, *Considerations on the disturbance attenuation problem for PI/PID controllers for a generic load disturbance dynamics*, 2017 22nd IEEE International Conference on Emerging Technologies and Factory Automation (ETFA) , Year: 2017 Pages: 1 – 8
16. Silviu Epure; Ciprian Vlad; Romeo Păduraru; **Marian Barbu**, *INTELSIS — Photovoltaic test bench: First experimental results*, 2017 22nd IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), Year: 2017 Pages: 1 – 4
17. Ciprian Vlad; Romeo Păduraru; Silviu Epure; **Marian Barbu**; Cristinel Dache; Cristian Victor Lungu, *PV emulation under commercially available programmable DC voltage source*, 2017 5th International Symposium on Electrical and Electronics Engineering (ISEEE), Year: 2017 Pages: 1 – 6.

18. **V. Minzu**, *Optimal Control Using Particle Swarm Optimization.Case study: Bilocal Constrained Problem for a DC Motor*, 5th International Symposium on Electrical and Electronics Engineering (ISEEE 2017), 20-22 Oct. 2017, ISBN 978-1-5386-2058-8; IEEE Xplore; DOI:10.1109/ISEEE.2017.8170683.
19. George Ciubucciu, **Razvan Solea**, Adrian Filipescu, Adriana Filipescu, "*Visual Servoing and Obstacle Avoidance Method based Control Autonomous Robotic Systems Servicing a Mechatronics Manufacturing Line*", The 9th IEEE International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications, 21-23 September, 2017, Bucharest, Romania, pp. 874-879.
20. Adrian Filipescu, **Daniela Cernega**, Adriana Filipescu, **Razvan Solea**, Eugenia Minca, " *SHPN Models Based Simulation and Control of Mobile Robotic Systems Integrated into A/DML", 21st International Conference on System Theory, Control and Computing (ICSTCC*), Sinaia, Romania, 19-21 Oct. 2017, pp.230-235.
21. Adrian Filipescu, **Razvan Solea, Daniela Cernega**, Adriana Filipescu Jr., George Ciubucciu, George Petrea, "*SHPN Modelling, Visual Servoing and Control of WMR with RM Integrated into P/RML*", 21st International Conference on System Theory, Control and Computing (ICSTCC), Sinaia, Romania, 19-21 Oct. 2017, pp.320-325.

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### *8.1.2. Factor de impact cumulat al lucrărilor cotate ISI*

1. IF=6.942
2. IF=5.715
3-21. IF = 0.25 x 18 = 4.5

**TOTAL = 17,157**

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### *8.1.3. Citări în reviste de specialitate cotate ISI*

1. Lemoine A, Delvigne F, Bockisch A, Neubauer P, Junne S. Tools for the determination of population heterogeneity caused by inhomogeneous cultivation conditions. Journal of Biotechnology. 2017; 251:84-93.

*Lucrare citata: Baicu L, **Ifrim G,** Frangu L, **Caraman S.** Viability diagnosis in biotechnological cultures through image processing. 19th International Conference on System Theory, Control and Computing, ICSTCC 2015, Oct.14 –16, Cheile Gradistei, Romania, IEEEXplore Digital Library, 2015:770-775.*

2. Marba-Ardebol AM, Emmerich J, Neubauer P, Junne S. Single-cell-based monitoring of fatty acid accumulation in Crypthecodinium cohnii with three-dimensional holographic and in situ microscopy. Process Biochemistry. 2017; 52:223-232.

*Lucrare citata: Baicu L, **Ifrim G,** Frangu L, **Caraman S.** Viability diagnosis in biotechnological cultures through image processing. 19th International Conference on System Theory, Control*

*and Computing, ICSTCC 2015, Oct.14 –16, Cheile Gradistei, Romania, IEEEXplore Digital Library, 2015:770-775*

3. Catalytic Hydrothermal Liquefaction of Microalgae for Bio-oil Production over Silylated SBA-15 with High Hydrothermal Stability, By: Lin, Qisong; Wu, Kejing; Chen, Yu; et al., INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH Volume: 56 Issue: 49 Pages: 14454-14462 Published: DEC 13 2017.

*Lucrare citata: Dynamic pH Model for Autotrophic Growth of Microalgae in Photobioreactor: A Tool for Monitoring and Control Purposes, By:* ***Ifrim, George*** *A.; Titica, Mariana; Cogne, Guillaume; et al., AICHE JOURNAL Volume: 60 Issue: 2 Pages: 585-599 Published: FEB 2014.*

4. Optimal decision curve of light intensity to maximize the biomass concentration in a batch culture, By: Lorena Garzon-Castro, Claudia; Alexander Cortes-Romero, John; Arcos-Legarda, Jaime; et al., BIOCHEMICAL ENGINEERING JOURNAL Volume: 123 Pages: 57-65 Published: JUL 15 2017

*Lucrare citata: Dynamic pH Model for Autotrophic Growth of Microalgae in Photobioreactor: A Tool for Monitoring and Control Purposes, By:* ***Ifrim, George A.****; Titica, Mariana; Cogne, Guillaume; et al., AICHE JOURNAL Volume: 60 Issue: 2 Pages: 585-599 Published: FEB 2014.*

5. Dynamic modelling of microalgae cultivation process in high rate algal wastewater pond, By: Bello, Muhammadu; Ranganathan, Panneerselvam; Brennan, Feargal, ALGAL RESEARCH-BIOMASS BIOFUELS AND BIOPRODUCTS Volume: 24 Special Issue: SI Pages: 457-466 Part: B Published: JUN 2017

*Lucrare citata: Dynamic pH Model for Autotrophic Growth of Microalgae in Photobioreactor: A Tool for Monitoring and Control Purposes, By:* ***Ifrim, George*** *A.; Titica, Mariana; Cogne, Guillaume; et al., AICHE JOURNAL Volume: 60 Issue: 2 Pages: 585-599 Published: FEB 2014.*

6. Microalgae as a potential source for biodiesel production: techniques, methods, and other challenges, By: Arenas, E. G.; Rodriguez Palacio, M. C.; Juantorena, A. U.; et al., INTERNATIONAL JOURNAL OF ENERGY RESEARCH Volume: 41 Issue: 6 Pages: 761-789 Published: MAY 2017.

*Lucrare citata: Multivariable feedback linearizing control of Chlamydomonas reinhardtii photoautotrophic growth process in a torus photobioreactor, By:* ***Ifrim, George*** *Adrian; Titica, Mariana;* ***Barbu, Marian****; et al., CHEMICAL ENGINEERING JOURNAL Volume: 218 Pages: 191-203 Published: FEB 15 2013.*

7. USING RECIRCULATING TECHNOLOGY IN PILOT-SYSTEM FOR MARICULTURE AT THE ROMANIAN BLACK SEA COAST, By: Nita, V.; Nenciu, M., JOURNAL OF ENVIRONMENTAL PROTECTION AND ECOLOGY Volume: 18 Issue: 1 Pages: 255-263 Published: 2017

*Lucrare citata: Results Regarding The Water Quality Control In Recirculating Aquaculture Systems, By:* ***Barbu, M.;*** *Ionescu, T.;* ***Ifrim, G.;*** *et al., JOURNAL OF ENVIRONMENTAL PROTECTION AND ECOLOGY Volume: 13 Issue: 1 Pages: 39-47 Published: 2012.*

8. The effect of the feeding pattern of complex industrial wastewater on activated sludge characteristics and the chemical and ecotoxicological effluent quality, By: Caluwe, Michel; Dobbeleers, Thomas; Daens, Dominique; et al., ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH Volume: 24 Issue: 11 Pages: 10796-10807 Published: APR 2017.

*Lucrare citata: Strategies For The Aerobic Biological Treatment Of The Dairy Wastewaters In Controlled Conditions, By: Palela, Mihaela;* ***Ifrim, George; Barbu, Marian****; et al., ENVIRONMENTAL ENGINEERING AND MANAGEMENT JOURNAL Volume: 9 Issue: 3 Special Issue: SI Pages: 399-405 Published: MAR 2010.*

9. Anti-disturbance proportional integral attitude control and stabilization of rolling hydraulic position system, By: Gong, Lishuang; Jin, Baoquan; Zhang, Hongjuan; et al., PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART I-JOURNAL OF SYSTEMS AND CONTROL ENGINEERING Volume: 231 Issue: 2 Pages: 117-130 Published: FEB 2017.

*Lucrare citata: Adaptive Automatic Gauge Control of a Cold Strip Rolling Process, By: Roman, Nicu; Ceanga, Emil; Bivol, Ioan;* ***et al.,*** *ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING Volume: 10 Issue: 1 Pages: 7-17 Published: 2010*

10. A Parallelizable Interior Point Method for Two-Stage Robust MPC, By: Klintberg, Emil; Gros, Sebastien, IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY Volume: 25 Issue: 6 Pages: 2087-2097, Published: NOV 2017

*Lucrare citata: Implementable fast augmented Lagrangian optimization algorithm with application in embedded MPC, By: Patrascu, Andrei; Necoara, Ion;* ***Barbu, Marian****; et al. Conference: 19th International Conference on System Theory, Control and Computing (ICSTCC) Location: ROMANIA Date: OCT 14-16, 2015*

11. Multi-Input Multi-Output Model-Free Predictive Control and Its Application to Wastewater Treatment, By: Li, Hongran; Yamamoto, Shigeru, IEEJ TRANSACTIONS ON ELECTRICAL AND ELECTRONIC ENGINEERING, Volume: 12 Issue: 5 Pages: 753-758 Published: SEP 2017

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12. Multiple Model Bank Selection Based on a New Validity Criterion ,By: Zribi, Ali; Chtourou, Mohamed; Djemel, Mohamed, CONTROL ENGINEERING AND APPLIED INFORMATICS Volume: 19 Issue: 4, Pages: 43-51 Published: DEC 2017

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