

# INDUSTRIAL PROCESSES CONTROL SYSTEMS AND INSTRUMENTATION

## Contact details

Name	<b>Industrial Processes Control Systems and Instrumentation</b>
Acronym	<b>IPCSI</b>
Logo	
Site	<a href="http://research.utcluj.ro/tl_files/research/Research%20Domain/Systems%20Engineering/6_Nascu.pdf">http://research.utcluj.ro/tl_files/research/Research%20Domain/Systems%20Engineering/6_Nascu.pdf</a>
Address	2 Observatorului street, lab. 301, Cluj-Napoca, Romania
Faculty Department	<b>Faculty of Automation and Computer Science Automation Department</b>
Telephone	+40-264-401 819
Fax	+40-264-401 220
Director	Prof. Dr. Eng. Ioan Nascu
e-mail	<a href="mailto:ioan.nascu@aut.utcluj.ro">ioan.nascu@aut.utcluj.ro</a>



Wastewater Treatment Plant Monitoring and Control



Control of the dissolved oxygen concentration in a wastewater treatment plant

## Areas of expertise

### Industrial processes control systems.

Performance evaluation of industrial processes, design, implementation and analysis of automatic systems for the control of process parameters.

**Advanced automatic control strategies:** evolved control structures, advanced control algorithms.

**Embeddedsystems-microcontrollers, data acquisition interfaces, industrial communications.**

## Team

### Prof. Dr. Eng. Ioan Nascu

Assist. Prof.Dr. Eng. Ruben Crisan, Assist. Dr. Eng. Tudor Buzdugan,

PhD students: Assist. Drd. Eng.Harja Gabriel, Drd. Eng.Butuza Alexandru, Drd. Eng.Cristescu Stefana

## Representative projects

**CASEAU "Strategii de conducere bazate pe tehnici de control avansat pentru optimizarea performantelor statiilor de epurare a apelor uzate si reducerea consumurilor energetice"**, PCCA 2013, Contract nr. 274/2014, [Caseau.wix.com/proiect](http://Caseau.wix.com/proiect)

**MULTIBAR, "Automatic modules for drinkable water using advanced oxidation processes and biofilter (multiple barriers)"**, PNII Innovation, 12DPST/20.08.2013, [http://www.icpebn.ro/site\\_ro/cercetare/multibar/index.html](http://www.icpebn.ro/site_ro/cercetare/multibar/index.html) (2013-2015)

**TEHNOPUR, "Obtaining ultrapure water plant from primary sources"**, 2008-2010, INNOVATION Contract no. 177/2008, [http://www.icpebn.ro/site\\_ro/cercetare/tehnopur/index.html](http://www.icpebn.ro/site_ro/cercetare/tehnopur/index.html) (2008-2010)

## Significant results

### The most representative publications of the past 5 years:

1. Crisan R., Nascu I., De Keyser R., Volcke E., EPSAC for wastewater treatment process (BSM1). 17th International Conference on System Theory, Control and Computing (ICSTCC), 14-19.Oct. 2015, Cheile Gradistei, Pages: 403 - 408, DOI: 10.1109/ICSTCC.2015.7321327, IEEE Catalog Number: CFP1536P-ART, ISBN: 978-1-4799-8481-7
2. Harja G., Vlad G., Nascu I., "Dissolved oxygen control strategy for an activated sludge wastewater treatment process ", Recent Advances in Electrical Engineering Series. Recent Advances in Systems. Proceedings of the 19th International Conference on Systems (part of CSCC'15), 16-20 July 2015, Zakynthos, Greece, Pages: 453 - 458, ISSN 17905117, ISBN 978-1-61804-321-4.
3. B. Muresan, S. Folea, I. Nascu, C. Ionescu, R. De Keyser, "Identification and modeling of the three rotational movements of a miniature coaxial helicopter", in *Transactions of the Society for Modeling and Simulation International*, vol. 89, no. 12, December 2013
4. C.Dărab, R. Crișan, G. Vlad, I. Nașcu, "An approach for industrial wastewater treatment process", in *Advances in Environmental Sciences*, vol. 5 issue 2, pp. 234-238, June 2013
5. Nascu Ioana, Ionescu CM, Nascu I, De Keyser R., "Evaluation of three protocols for automatic DOA regulation using Propofol and Remifentanil ", Proceedings of 9th IEEE International Conference on Control & Automation 2011, Santiago, Chile, 19-21 Dec. 2011, pp: 573 – 578, ISBN: 978-1-4577-1475-7, INSPEC Accession Number: 12507045,

### Patents:

"Parameters scheduling method for PID controllers", no. VI/112, September, 30, 2013

### The offer addressed to the economic environment

Research & development	Modeling and simulation of processes with applications especially in chemical and biochemical processes. Advanced control strategies in biochemical processes. Advanced control strategies with applications in medicine.
Consulting	Evaluation and optimization of automatic control systems. Implementation of control systems using advanced control strategies
Training	Industrial process control systems Intelligent systems for buildings automation Sensors and instrumentation. PLC configuration and programming. Advanced control algorithms (model based predictive control, adaptive control).