

## National Grand Lodge of Romania & Romanian Academy 2016 “Henri Coandă” Award for Applied Sciences Prof. Ion Gheorghe BOLDEA, PhD, New Member of the Romanian Academy

Acad. Ion Boldea, IEEE Life Fellow, University Politehnica Timisoara, Romania

Subject: 2016 “Henry Coanda Award” for applied sciences /by Romanian Academy and the Great National Masonic Loje  
For the book : Ion Boldea : “Electric Generators handbook” vol. 1 + 2, 1000 pages, CRC Press Florida, Taylor and Francis Group, New York, second edition, 2016

The uni-author is still the single Monograph in English, in two volumes and 1000 pages on all electric modern electric generators, from topologies to modeling, performance transients to power electronics digital control, optimal design and testing. Electric generators convert mechanical energy in prime movers (turbines) into electric energy via a storage medium, magnetic energy.

Energy as the capacity of a system to produce mechanical useful work is together with Knowledge, the main two concepts that may describe all we humans do.

Electric energy by its flexibility in conversion, transport and utilization for motion and temperature control is the workhorse of all industries. Electric generators are used to “produce” all electric energy today with the exemption of Photovoltaic method (less than 0.5 %, still, but increasing); Electric generators are run by turbines whose mechanical energy is provided by fossil fuels or by river or wave water or wind energy; the latter is call “Renewable Energy” because it makes use of solar power beamed now on Earth at 1KW/m<sup>2</sup>.

The Handbook treats all generators from those in wireless hotel door opener and cellular phone microphones to autonomous generators on vehicles and as auxiliary power sources for Telecom, hospitals, banks Data Centers and thermal or hydro or wind power plants (or parks), at powers from less than 1 W to 1800 MVA per unit

The Handbook presents a unitary view of electric generators with numerous results from literature and of the author’s over decades of experience in the field, with many numerical examples mainly for the young reader/researcher/inventor/designer in industry.



Thanks I am due with humility for this prestigious Award (Henry Coanda is a legendary Romanian creator in science). I am also conscious of the generous degree of luck and circumstance involved in such a process, and only hope that, by continuing the work humbly, with internationally visible results, in full honesty, compassion and joy, I may come closer to deserve it fully.

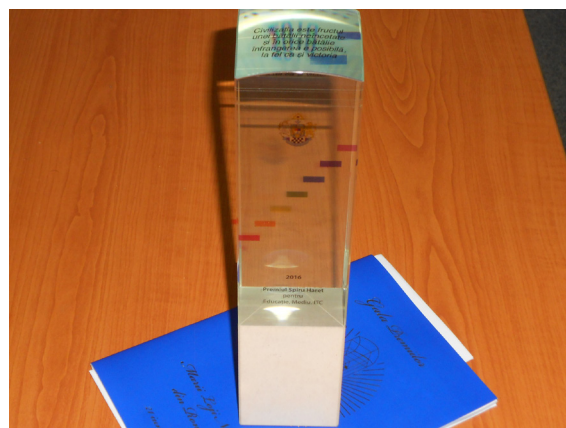
Sincerely, Ion Boldea  
January, 2017.

## National Grand Lodge of Romania & Romanian Academy 2016 “Spiru Haret” Award for Education, Environment and IT Prof. Radu-Emil PRECUP, PhD & Lect. Mircea-Bogdan RĂDAC, PhD

The Spiru Haret Award from the National Grand Lodge of Romania in partnership with the Romanian Academy for education, environment and IT has been awarded to Lect. Dr. Mircea-Bogdan RĂDAC and Prof. Radu-Emil PRECUP, with the Department of Automation and Applied Informatics, for the following group of papers published in 2015 and generically called Contributions to Model-Free Data-Driven Control:

- M.-B. Rădac, R.-E. Precup, Data-based two-degree-of-freedom iterative control approach to constrained non-linear systems, IET Control Theory & Applications, vol. 9, no. 7, pp. 1000-1010, 2015, impact factor = 2.048.
- M.-B. Rădac, R.-E. Precup, Optimal behaviour prediction using a primitive-based data-driven model-free iterative learning control approach, Computers in Industry, vol. 74, pp. 95-109, 2015, impact factor = 1.957.
- M.-B. Rădac, R.-E. Precup, E. M. Petriu, Model-free primitive-based iterative learning control approach to trajectory tracking of MIMO systems with experimental validation, IEEE Transactions on Neural Networks and Learning Systems, vol. 26, no. 11, pp. 2925-2938, 2015, impact factor = 4.854.
- M.-B. Rădac, R.-E. Precup, E. M. Petriu, Constrained data-driven model-free ilc-based reference input tuning algorithm, Acta Polytechnica Hungarica, vol. 12, no. 1, pp. 137-160, 2015, impact factor = 0.544.
- R.-C. Roman, M.-B. Rădac, R.-E. Precup, E. M. Petriu, Data-driven optimal model-free control of twin rotor aerodynamic systems, Proceedings of 2015 IEEE International Conference on Industrial Technology ICIT 2015, Seville, Spain, pp. 161-166, 2015.

This group of papers proposes learning approaches for automatic control systems in order to endow them with intelligent features such as learning, prediction and hierarchical control capabilities, which are specific to living organisms. This attempt should lead towards higher degrees of autonomy and adaptability in feedback control systems, enabling them able to deal with uncertainty, environment operational constraints, nonlinearities, scalability, large number of design variables. The research fits well within current



trends in control and artificial intelligence research topics such as autonomous self-driving vehicles, robots and unmanned aerial vehicles. The underlying idea borrows the ability of living organisms to learn, accumulate learning experience and extrapolate it optimally in new situations never seen before, while never explicitly solving mathematical equations for that, using the biological brain as a hierarchical high-level controller that coordinates the low level controllers. This has lead and motivated the development of the model-free data-driven techniques proposed by the authors.

## Romanian Academy 2016 “Constantin Budeanu” Award Prof. Lucian Nicolae TUTELEA, PhD & Assoc. Prof. Sorin Ioan DEACONU, PhD

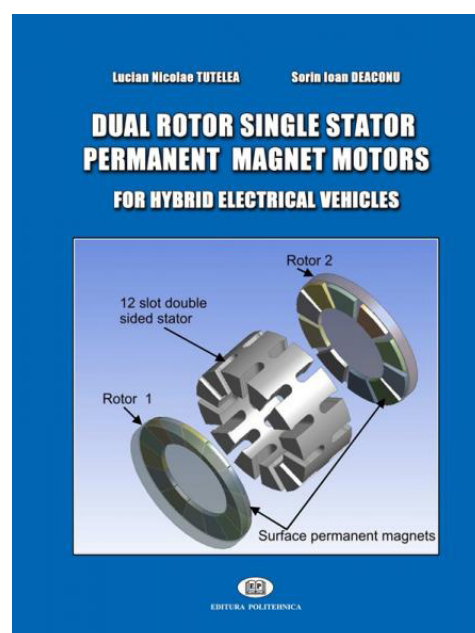
The actual e - continuously variable transmission (e-CVT) solution for the parallel Hybrid Electric Vehicle (HEV) requires two electric machines, two inverters, and a planetary gear. A distinct electric generator and a propulsion electric motor, both with full power converters, are typical for a series HEV.

This book introduces a novel brushless, single winding and single stator, dual PM rotor axial-air-gap machine capable to deliver independently torque at the two rotors by adequate vector control. It is presented the preliminary designing with Matlab, quasi 3D and 3D FEM analysis and validation, the optimal design via Hooke Jeeves method and control of a synchronous machine with axial airgap single stator dual-rotor with permanent surface magnets and different pole pairs number, destined for hybrid electric vehicles (HEV) applications. For machine's designing was used the equivalent magnetic circuits method that takes into account the saturation and dispersion of the magnetic field.

Lucian Nicolae Tutelea is professor at the Politehnica University of Timisoara, Romania, PhD coordinator in electrical engineering, member of IEEE since 2007, qualified in the field of optimal design of electrical machines, digital control of electrical drives, loading the artificial load of the induction machine, modeling and simulation of electrical drives using the languages C and Matlab, finite element analysis of electric machines with 30 articles in ISI conferences and journals, 6 participations in research projects (since 1997) as a director or as a team member in the field of electrical machines, power electronics, electric drives systems in vehicles, renewable energy systems and electric drives (of which 1 is a FP7 project).

Sorin Ioan Deaconu is associate professor at the Politehnica University of Timisoara, Romania, member of IEEE since 2006, the main author and/or co-author of more than 100 international paper, 42 ISI articles and 38 DBI, the main author and/or co-author of 20 books and member at 10 national grants team. Associate editor at “Journal of Electrical Engineering” from 2015 and reviewer at more than 75 ISI and 400 BDI articles (journals and conferences).

Since 1994, he had collaborated with BeeSpeed Automation Ltd, Timișoara, where he was involved in several industry projects regarding industrial automation, electric machines and drives in many company in the western of Romania.

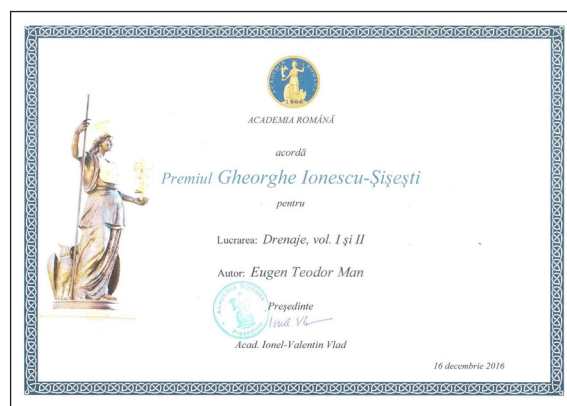


The book was conceived primarily as a technical support for electrical engineers in hybrid and electrical vehicles design and production, but it is expected to be of interest and useful for students and staff members of electrical engineering faculties, as well as, for engineers working in automotive industry.

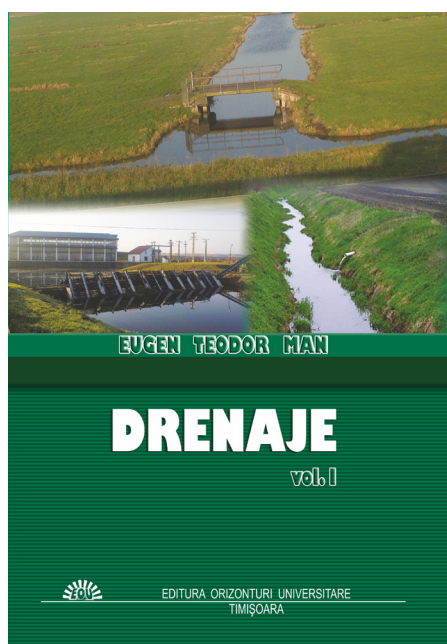
## Romanian Academy 2016 “Gheorghe Ionescu Sișești” Award Professor emeritus Eugen Teodor MAN, PhD

DRAINAGE vol. I and II,  
Publisher “Horizons University” of Timisoara, 2014,  
ISBN 978-973-638-565-0  
Vol. I - 2014-Bibliogr.-ISBN 978-973-638-566-7;  
Vol. II - 2014-Bibliogr.-ISBN 978-973-638-567-4  
Author : Prof. univ. emerit dr. eng. Man Teodor Eugen

The present work was constructed as a monograph focused on issues concerning drainage, summarizing knowledge on agricultural drainage regarding: the worldwide history of land drainage, evolution and dynamics of land drainage in Romania, computing / dimensioning / design problems, construction, operation and maintenance of drainage arrangements, measuring flows in drainage arrangements as well as the results of studies and researches conducted over the past 40 years in this area, by the author, together with the research team at the “Politehnica” University of Timisoara, Faculty of Civil Engineering, respectively Faculty of Hydrotechnics (1990-2011), in the Department of Hydraulic Structures and Land Improvement, Department of Hydrotechnics (2011-2014), from the '70s to the present.



The book “Drainage” Vol I and II (957 pages), Ed “Horizons University” Timisoara 2014 he won “Gheorghe Ionescu Sișești” awarded by the ROMANIAN ACADEMY in 2016 and the prize “Ion M. Gheorghiu” awarded by the ACADEMY OF AGRICULTURAL AND FORESTRY BUCHAREST 2015.





## Romanian Academy 2016 “Grigore Moisil” Award Radu-Emil PRECUP, Radu-Codruț DAVID, Ștefan PREITL & Mircea-Bogdan RĂDAC

The “Grigore Moisil” Prize from the Romanian Academy has been awarded to Prof. Radu-Emil PRECUP (Department of Automation and Applied Informatics (DAAI)), Dr. Radu-Codruț DAVID (Sustainalytics), Prof. Emil M. PETRIU (University of Ottawa, Canada), Prof. Ștefan PREITL (DAAI) and Lect. Dr. Mircea-Bogdan RĂDAC (DAAI), for the following group of papers published in 2014 and generically called Optimization of fuzzy systems:

- R.-E. Precup, R.-C. David, E. M. Petriu, M.-B. Rădac, S. Preitl, Adaptive GSA-based optimal tuning of PI controlled servo systems with reduced process parametric sensitivity, robust stability and controller robustness, IEEE Transactions on Cybernetics, vol. 44, no. 11, pp. 1997-2009, 2014, impact factor = 4.943.
- R.-E. Precup, R.-C. David, E. M. Petriu, S. Preitl, M.-B. Rădac, Novel adaptive charged system search algorithm for optimal tuning of fuzzy controllers, Expert Systems with Applications, vol. 41, no. 4, part 1, pp. 1168-1175, 2014, impact factor = 2.981.
- R.-C. David, R.-E. Precup, E. M. Petriu, S. Preitl, M.-B. Rădac, L.-O. Fedorovici, Adaptive evolutionary optimization algorithms for simple fuzzy controller tuning dedicated to servo systems, in: Fuzzy Modeling and Control: Theory and Applications, F. Matia, G. N. Marichal and E. Jimenez, Eds., Atlantis Computational Intelligence Systems, vol. 9 (Atlantis Press and Springer-Verlag), pp. 159-173, 2014.

The awarded group of papers proposes nature-inspired evolutionary-based optimization algorithms. These algorithms are applied to the optimal tuning of fuzzy controllers for a class of nonlinear servo systems. Fuzzy control systems with a reduced parametric sensitivity are obtained. This can be of large importance for many fuzzy logic, control, modeling, optimization and expert systems applications, as they are also applied to the optimal tuning of fuzzy models that characterize the nonlinear dynamics specific to processes in technical and non-technical fields. These papers are a product of the joint cooperation between two universities, and a part of this cooperation is supported by research contracts. These papers are highly appreciated and cited by specialists who actively work in automatic control, optimization and systems modeling.



## Romanian Academy 2016 “Tudor Tănăsescu” Award Prof. Gheorghe-Daniel ANDREESCU, PhD

The Tudor Tănăsescu award of the Romanian Academy is an annual prize for Excellency in research with publications and citations inside the field of the Information Science and Technology section. Prof. Gheorghe-Daniel Andreescu is the recipient of this award in December 2016 for original research contributions in four scientific papers in the area of advanced automation.

### Short biography

Gheorghe-Daniel Andreescu received the diplomat engineer degree in Applied electronics in 1977 and the PhD degree in Automatic systems (System engineering) in 1999 from the Politehnica University of Timișoara (UPT). He is currently a Professor at the Department of Automation and Applied Informatics in UPT since 2004, PhD adviser in System engineering since 2005, and director of the UPT Doctoral School of Engineering Studies since 2012.

His main research field of interest include: advanced control of ac drives, sensorless control, observers, sliding-mode control, power electronics control, mechatronic systems, greenhouse climate control, modelling and simulation of hearing with cochlear implants, drum boiler-turbine control, real-time implementations.

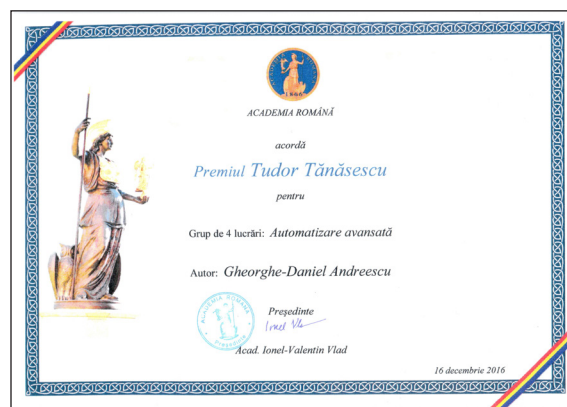
Prof. Andreescu is author or co-author of more than 90 papers in international conference proceedings and international journals, with 16 journal papers indexed in Web of Science including IEEE Transactions on: Industrial Electronics (2), Industry Applications (3), Energy Conversion (2), Power Electronics (2); IET Electric Power Applications (3), Electric Power Components and Systems (3) with an average impact factor  $IF = 2.56$ . He is a Senior Member of IEEE since 2005.

His papers have more than 1100 independent citations from indexed papers, including more than 600 citations in Web of Science (300 in journals with a cumulative impact factor  $IF = 890$  and average  $IF = 2.9$ ), with citations of more than 40 US/EU patents and 80 PhD/MS thesis abroad. His Hirsh index in Web of Science is 11, and in Scopus is 17. Citations include authors from more than 100 universities (20%) in Top 500 World Universities. Prof. Andreescu has been nominated by Thomson Reuters as a Highly Cited Researcher in 2016.

Original contributions in 2014 – papers and citations

For the 2014 year, Prof. Andreescu has more than 60 citations in Web of Science Thomson Reuters.

There are four papers in 2014 with original contributions taking into account for Romanian Academy award, where Prof. Andreescu is coauthor in three different domains of advances automation as following:



A) Advanced sensorless control systems for ac electric drives:

[1] M.C. Ancuti, L. Tutelea, G.-D. Andreescu, F. Blaabjerg, C. Lascu, I. Boldea, Practical wide-speed-range sensorless control system for permanent magnet reluctance synchronous motor drives via active flux model, *Electric Power Components and Systems*, 42(1): 91–102, Jan. 2014.

B) Greenhouse climate control systems:

[2] E.H. Gurban, T.-L. Dragomir, G.-D. Andreescu, Greenhouse climate control enhancement by using genetic algorithms, *Control Engineering and Applied Informatics*, 16(3): 35–45, Sep. 2014.

[3] E.H. Gurban, G.-D. Andreescu, Comparison of modified Smith predictor and PID controller tuned by genetic algorithms for greenhouse climate control, *Proc. IEEE 9th International Symp. on Applied Computational Intelligence and Informatics*, pp. 79–83, May 2014.

C) Modelling and simulation of hearing with cochlear implants with novel auralization method:

[4] A.M. Kuczapski, G.-D. Andreescu, Modelling and simulation of hearing with cochlear implants: A proposed method for better auralization, *Proc. 6th International Workshop Soft Computing Applications (SOFA 2014)*, and in *Soft Computing Applications*, Vol. 357 series *Advances in Intelligent Systems and Computing*, Springer, pp. 753–767, 2015.

Again, I would like to thank to my co-authors for the beautiful working together with the main results given by the above papers. From Politehnica University of Timisoara – greatly thanks to my excellent PhD students E.G. Gurban and A.M. Kuczapski, special thanks to prof. T.L. Dragomir and highly considerations and gratitude to prof. Ion Boldea with his team M.C. Ancuti, L. Tutelea, C. Lascu, and many thanks to prof. F. Blaabjerg from Aalborg University, Denmark.

## International Exhibition of Inventions of Geneva 2016 Gold Medal and “Best Invention Award” Special Prize Corneliu BIRTOK-BĂNEASĂ, PhD Student

The International Exhibition of Inventions of Geneva 13-17 April 2016 played host to over 1,000 inventions from 40 countries were presented to more than 70,000 visitors.

I presented at last year's Salon a device called 'Integrated heat deflector' used on vehicles during summer to combat the engine's power loss due to high external temperatures. The integrated heat deflector addresses this technical problem by protecting the intake manifold and air filter from the thermal radiations generated by the cooling radiator of internal combustion engines, which optimizes its operation during very hot days; it decreases the fuel consumption by up to seven percent.

The jury acknowledged that by implementing this invention the fuel consumption goes down, and the device contributes to a diminishing of the pollutants emitted into the atmosphere by the vehicles where it might be used; that it is a patented innovation; and not least that it is part of a UPT doctoral study.

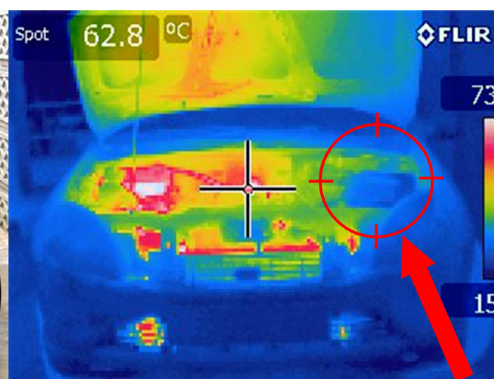
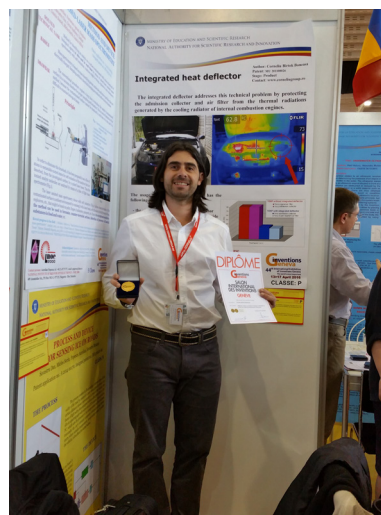
The international jury rewarded the invention with a gold medal and a “Best Invention Award” special prize on behalf of Science & Technology Parks Corporation from Hong Kong.

### Results / portfolio

33 Gold Medals: INVENTIKA 2008; BRUSSELS 2008, INVENTIKA 2009; GENEVA 2010; INVENTICA 2010; MOSCOW 2010; ZAGREB 2010; KUWAIT 2010; INVENTICA 2011; PROINVENT 2012; GENEVA 2012; BRUSSELS 2012; GENEVA 2013; BRUSSELS 2013; GENEVA 2014; PROINVENT 2015; GENEVA 2015; TRAIAN VUIA 2015; INVENT INVEST IASI 2015; BRUSSELS 2015; PROINVENT 2016; GENEVA 2016; EUROINVENT 2016; TRAIAN VUIA 2016.

6 Silver Medals: GENEVA 2009; MOSCOW 2009; BRUSSELS 2009; TRAIAN VUIA 2015; ARCA 2015; INVENT INVEST IASI 2015.

2 Bronze Medals: ZAGREB 2009; GENEVA 2011.





# Research Report 2016

## Bruxelles INNOVA 2016 Fair

Gold medal with mention alongside a diploma with honors

Ștefan PAVEL, Ancuța Letiția TUTELCA, Deian Adrian JIFCU, Eugen Florin LĂCĂTUȘU, Andrei ADAM, Cristina VLAD DALIBORCA, Victor DUMITRESCU, Elena HOGEA, Iconia Ecaterina BÎRZA & Silviu Cristian SUCIU

In november 2016, POLITEHNICA University of Timișoara was been selected to participate at Bruxelles INNOVA 2016 Fair. In the romanian stand, under the aegis of ANCSI (National Authority for Scientific Research and Innovation), it was exhibited the invention ELECTRIC INSTALATION FOR DENTAL MEDICAL UNITS AIR DISINFECTION, appreciated by a large number of visitors and awarded, by 6 international examiners, with a diploma and gold medal with honors alongside a diploma with honors and a medal from HALLER foundation – Proinventio/Poland.





## Springer & Environmental Monitoring and Assessment 2016 Certificate of Excellence in Reviewing Prof. Ioana IONEL, PhD

In academic publishing, the goal of the review is to assess the quality of articles submitted for publication.

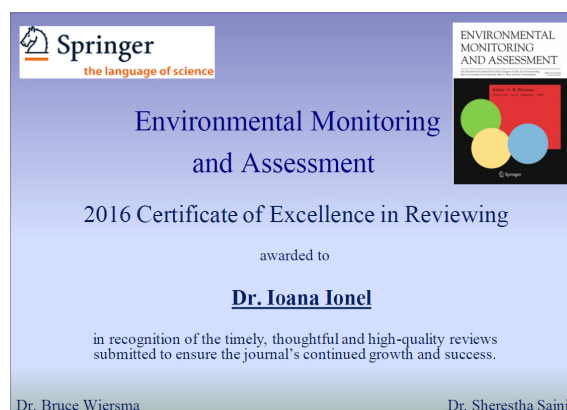
Peer review has been a formal part of scientific communication since the first scientific journals appeared more than 300 years ago. The Philosophical Transactions of the Royal Society is thought to be the first journal to formalize the peer review process [<https://www.elsevier.com/reviewers/what-is-peer-review>].

Professional peer review focuses on the performance of professionals, with a view to improving quality, upholding standards, or providing certification. In academia, peer review is common in decisions related to faculty advancement and tenure [[https://en.wikipedia.org/wiki/Peer\\_review](https://en.wikipedia.org/wiki/Peer_review)].

By receiving this award I really felt honored, especially because my registration as reviewer attests directly the fact that the Romanians can assist and support maturity and continuity of an excellent and valuable per review journal. Going back, I cannot remember when I started to dedicate time for reviewing. First it was interest, then a pleasure, and finally I found out that it is a necessity for a teacher that must face the continuous struggle to turn every lecture, in the era of progress and internet, into an attractive one, accounting also for the recent developments in the field. The second necessity grows from the need of improving not only my knowledge, but also the technique and methods of writing, explaining and judging.

I feel very content when my advice is accepted partially or totally, or even not, but it is taken into account and debated! The chance is offered frequently as per reviewer, in a group of experts. Initially you get training, mostly on line, subject to different situations and steps to follow. The review process is single, double or direct peer review, most recently the more transparent peer review was introduced.

Generally, after all reviewers express their recommendations (according to special asked questions and as well opinions, focusing on real aspects) and decisions, the corresponding author are posting a revised version, and the second or even third stage of review occurs, by the same or different specialists, depending on options expressed individually. It is really a success when a statistic is realized from time to time by the editor and you realize that you had also a contribution to the scientific paper, in its accepted form.



Ethics, impartiality, accuracy, power of decision and validation, recognition of work, reasonable and constructive criticism, power of evaluating, concentration are basics for a friendly and successful blind review.

The received certificate denotes that the Politehnica University of Timisoara contributes, through its staff, both to the development of science and supports progress and quality in science.

## International Journal Fatigue & Fracture of Engineering Materials & Structures Top Reviewer Award Prof. Liviu MARŞAVINA, PhD

In 2016 Prof. Dr. Eng. Liviu MARŞAVINA from University Politehnica Timişoara received the Best Reviewer award for International Journal Fatigue & Fracture of Engineering Materials & Structures (Impact factor 1.838 in 2015), edited by John Wiley & Sons Ltd. As a consequence Prof. Marsavina was nominated in the Editorial Board of the Journal starting from 2017.



## General Association of Engineers in Romania - A.G.I.R. A.G.I.R. 2015 Award to the category "Applied Sciences" Prof. Vasile MARINCA, PhD & Prof. Nicolae HERIȘANU, PhD

The A.G.I.R. 2015 Award - for the book:

Marinca V., Herisanu N., THE OPTIMAL HOMOTOPY ASYMPTOTIC METHOD. ENGINEERING APPLICATIONS

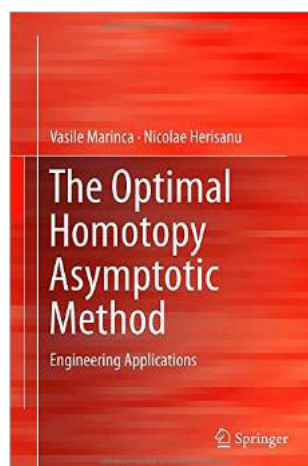
SPRINGER International Publishing AG Switzerland, 2015, ISBN 978-3-319-15373-5

Since 1995, the AGIR Award is awarded yearly, for the previous year, to the most valuable engineering works or original published works with high scientific level. On September 16, 2016 prof. V. Marinca and prof. N. Herisanu received this award to the category "Applied Sciences" for their book published by Springer in 2015.

This is a reference book with an essential contribution to the development of the field of "Engineering Science" and it is primarily intended to researchers, academics, professional engineers and PhD students working in different engineering branches.

The subject approached by the authors in this book is related to analytical investigation of nonlinear dynamical systems. The authors proposed an original method, which already produced a good impact in the scientific world, judging upon the numerous papers published based on this method by many researchers worldwide.

The entirely book relies on the original research results obtained by the authors in the field of nonlinear dynamical systems and represents a continuation of their first book published by Springer in 2011 - "Nonlinear Dynamical Systems in Engineering. Some Approximate Approaches", ISBN 978-3-642-22735-6.



The book emphasizes the applicability of the OHAM to various models selected from various engineering fields such as vibration, classical and fluid mechanics, electrical machines, thermodynamics, physics, and so on.

The analytical solution of such dynamical systems are optimized through rigorous and efficient procedures using computer programs so that always a very good accuracy is ensured even for strong nonlinearities.

It is to remark that according to WorldCat database [www.worldcat.org](http://www.worldcat.org), the book is already present in 201 libraries worldwide, including some of the most important top universities of the world such as Stanford University and Massachusetts Institute of Technology (MIT). The awarding ceremony took place on September 16, 2016 at the headquarters of AGIR from Calea Victoriei 118, Bucharest.





## BANAT EXCELLENCE GALA - 3<sup>rd</sup> Edition, 2016 "Traian Vuia" Award for Engineering Sciences Professor emeritus Alexandru NICHICI, PhD

Banat Excellence Gala is organized annually by the Romanian Academy - Timisoara Branch, State Universities of Timisoara and National Grand Lodge of Romania. On the occasion, they were awarded personalities of the academic environment of Banat from different fields of science, as natural science, social science, engineering, humanities, biological science, agronomy and civic involvement.

At the 3<sup>rd</sup> Edition of Banat Excellence Gala, at 23 november 2016, Professor Alexandru Nichici has received "Traian Vuia" Award for "Engineering Sciences" as recognition of its excellence in academic, scientific and managerial lifetime activities and achievements. The Award Jury also appreciated the dignity and academic ethics consistently promoted by Professor Alexandru Nichici.

Alexandru Nichici is an emeritus professor of the POLITEHNICA University of Timisoara, Romania.

### Alexandru Nichici - Biographical Summary

Professor Alexandru Nichici was born on May 29, 1935 in the village Ivanda, Timis County, Romania. In 1958, he graduated Polytechnic Institute of Timisoara, Faculty of Electrical Engineering. He received his PhD in 1970, after defending the PhD thesis: "Fundamental Phenomena in electro-discharge machining of metallic materials". Since 1971, Alexandru Nichici became assistant professor and since 1980 – university professor at The Materials Technology Department, Mechanical Faculty, Polytechnic Institute of Timisoara. In 1974-1976 periods he taught at the National University of the Republic of Zaire. Since 1990 he became PhD director in the domain of Materials technology. After official retirement in 2000, professor Alexandru Nichici coordinated and taught basic courses in an advanced training program for doctoral students of Timisoara Politehnica University (2008-2011). In 2014, he was awarded with the Professor Emeritus degree. In the management of the University Politehnica Timisoara, Professor Alexandru Nichici exercised the functions of Vice - Dean of the Mechanical Faculty (1977-1982), Head of the Department of Mechanical Technology (1985-1990), Rector of the Politehnica University (1992-1996) and scientific secretary of the University Senate (1996-2000).



COMMUNICATION SKILLS: French, English, Russian, Serbian, Romanian; ACADEMIC AND SCIENTIFIC DOMAINS OF COMPETENCE: Material Science and technology; Systems and technologies for materials processing by electrical erosion and laser, Experiments design, Universities management; PROFESSIONAL ASSOCIATIONS: General Association of Engineers in Romania, The Society of Photo-Optical Engineers, Alliance of Universities for Democracy; PUBLICATIONS: numerous scientific papers, textbooks and some original scientific and academic books, as: *Prelucrarea prin eroziune în construcția de mașini*, Editura Facla, 1983; *Formarea profesională în inginerie. Ieri, azi, mâine. Eșuri.*, Editura „Politehnica”, 2004; *Lucrări științifice- concepere, redactare, comunicare*, Editura „Politehnica”, 2008, 2010; *Șansă și determinare (memorialistică)*, Editura „Politehnica”, 2014.



## American Romanian Academy of Arts and Sciences Young Scientist Poster Award in Railway History Assist. Prof. Ramon Mihai BALOGH, PhD

### Brief history of American Romanian Academy of Arts and Sciences

ARA is an internationally nonprofit organization recognized academic organization that supports multidisciplinary studies and achievements in exact and natural sciences, mathematics, also linked with arts, linguistics, literature, political studies and sociology. The main goal is to foster cultural exchanges between the American and Romanian cultures, and it is based mainly on its members' activity, having a Romanian origin or sympathizing with them. ARA was founded in California in 1975 by a group of American-Romanians, and by 2016 it has of about 63 Honorary Members, 80 Full Members, 80 Corresponding Members and 7 Benefactors. Their valuable support is a great asset for ARA. Since 1975, ARA has had Honorary members amongst very well known personalities like: the writers Eugen Ionesco and Virgil Gheorghiu, the philosopher Mircea Eliade or presentely the Nobel Prize in physiology or medicine, Prof. George E. Palade and the Romanian astronaut Dr. Dumitru-Dorin Prunariu. Some of the invaluable members have passed away but the legacy they left is still alive and cherished by ARA, its members, their families, and all of their friends. The Romanian branch of ARA has its center in Timișoara, being closely coordinated with the US main organization.

ARA organizes and sponsors conferences, annual congresses, organizes research projects, and publishes its own peer-reviewed international journal under the title Journal of the American Romanian Academy of Arts and Sciences, and the ARA Newsletter for its membership. The highlight of the annual congress is its Proceedings which is published on an annual basis. Also organizes educational courses at various times in specific areas such as, for example: Mathematics, Fluid Mechanics, Economics, Romanian and American History, Comparative History of Religions, Romanian Folklore and American Literature correlates, Aesthetics, Folk Dancing, Folklore Quilting and Paintings. The engineering and computing courses organized in collaboration with the Romanian Branch of ARA in Timișoara are especially popular, and attracted large audiences of both students and faculty.



I took the opportunity, after I received my PhD title and gained experience in my field of activity to get more close contact to prominent thinkers of Romanian descent, as well as thinkers of demonstrated interest in the Romanian contributions to the advancement of arts and sciences, and thus I sent a proposal to the 40-th ARA congress, organized in 2016, Montreal, Canada, July 28-31. I feel very sad seeing the present situation of the Romanian railway, and felt that I should present, with my humble possibilities, that Romania, especially Banat, can be considered pioneer in railway applications, roads and construction, monumental achievements from which only the history is mentioning it. The Banat region, situated at the geographic crossroads between Eastern and Western Europe, with a special history and a destiny often broken by the vicissitudes of time, is known for many primordialities, all certified without denial. One of them is the first railway track on the present territory of Romania, that proofs the development and entrepreneurial spirit of the Bant inhabitants. Thus I wrote the paper Looking through the curtain of history, having as coauthors Dr. Dan S. STEPAN and Professor Ioana IONEL, that encouraged and supported me a lot. The surprise was that the paper was awarded with a special prize, and I feel proud of the fact that it was achieved in such a creative and precious atmosphere of the ARA conference.  
<http://www.americanromanianacademy.org/2016-ara-awards>.

## 7 Medals at European Exhibition of Creativity and Innovation - EUROINVENT Award for the Best Fabrication Pending and Gold Medal at INVENT - INVEST 2016

POLITEHNICA University of Timișoara took part to the 8<sup>th</sup> edition of the European Exhibition of Creativity and Innovation - **EUROINVENT** held in Iași, Atrium Palas Mall, 19-21 may 2016, organised by Romanian Inventors Forum, „Gheorghe Asachi” Technical University, „Europe direct” Association for Ecology and Sustainable Development Iași and „Al. I. Cuza” University, under the aegis of IFIA – International Federation of Inventors’ Associations and WIIPA – World Invention Intellectual Property Associations.

There were 560 inventions and research themes from 43 countries.

POLITEHNICA University of Timișoara exhibited a number of 6 inventions with prototypes:

◇ WASTE WATER DECONTAMINATION SYSTEM IN THE DENTAL UNIT – **Ștefan PAVEL**, Prof. **Ioan BORZA**

◇ LIGHTING SYSTEM FOR THE „CERAMIC ROOM” COMPARTMENT OF THE DENTAL LABORATORIES – **Ștefan PAVEL**, Prof. **Ioan BORZA**

◇ COMPRESSED AIR SYSTEM FOR DENTAL UNITS – **Ștefan PAVEL**, Prof. **Ioan BORZA**

◇ ELECTRIC INSTALATION FOR DENTAL MEDICAL UNITS AIR DISINFECTION – **Ștefan PAVEL**, Prof. **Ioan BORZA**

◇ PORTABLE DEVICE FOR SIGNALING PAIN, SENSITIVITY OR DISCOMFORT DURING THE COURSE OF MEDICAL DENTAL ACTIVITY – **Ștefan PAVEL**, **Silviu-Cristian SUCIU**

◇ PORTABLE DEVICE FOR AIR AND SURFACES DISINFECTION IN ENCLOSED ENVIRONMENTS – **Ștefan PAVEL**, **Silviu-Cristian SUCIU**

The inventions were appreciated by the visitors and the international jury (Honorary president Kane KRAMER – British Inventors Society (United Kingdom), President Mohd Mustafa Al BAKRI ABDULLAH – Universiti Malaysia Perlis (Malaysia), Vice-president Alireza RASTEGAR – International Federation of Inventors’ Association (IFIA), Vice-president, Ljiljana PEDISIC – Croatian Inventors Association (Croatia) ) assessed and awarded them with 7 medals, 4 gold and 3 silver.

POLITEHNICA University Timișoara took part to the 7<sup>th</sup> edition of “**INVENT - INVEST 2016**” Inventions and Practical Ideas – International Fair held in Iași at Palatul Culturii-Complexul Muzeal Național „Moldova”, organised by Romanian Inventors Society and “Gheorghe Asachi” Technical University, an international scientific event intended for research results and technical creativity promotion, alongside a connection possibility between inventors and researchers with investors.

Beside the former 6 inventions, awarded at the previous event held in Iași between 19-21 2016, POLITEHNICA University of Timișoara exhibited the invention **MOBILE DEVICE FOR INFANT SUPPORT DURING PAEDIATRIC RADIOLOGY** (**Ștefan PAVEL**, **Călin Marius POPOIU**), awarded with “**AWARD FOR THE BEST FABRICATION PENDING**” and gold medal.

Other prototypes, showed in posters and short footage at the UPT stand, were valued by 29 visitors and also assessed and awarded by an international jury with 4 gold medals and diploma of excellence and 3 Fair medals with diploma (**Ștefan PAVEL**, **Silviu-Cristian SUCIU**, **Ancuța Letiția TUTELCA**, Prof. **Ioan BORZA**).





## MakeLearn and TIIM 2016 Joint International Conference, Timișoara, Romania

### BEST PAPER AWARDS

Assoc. Prof. Claudiu Tiberiu ALBULESCU, PhD & Assist. Prof. Șerban MICLEA, PhD

BEST PAPER AWARDS at MakeLearn and TIIM Joint International Conference, Timisoara, Romania

Conference aims:

- MakeLearn & TIIM 2016 conference theme focuses on Managing Innovation and Diversity in Knowledge Society through Turbulent Time.
- Innovation has become management's new imperative and finding novel solutions to important problems is not only hard, but complex.
- Knowledge management can be the foundation in the search for the right answers and future directions in managing innovation and diversity in knowledge-based society.

The paper 'The interdependence between Italian firms' access to finance and their probability of default' received the "Best Paper Award" in the framework of the MakeLearn & TIIM 2016 conference, held in Timisoara on 25-27 May 2016.

In this work, the authors presented a part of their research results under the project "The impact of the economic and financial stability on investments, innovation process and entrepreneurial activity in the EU" (PN-II-RU-TE-2014-4-1760, UEFISCDI).

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