



## Europass Curriculum Vitae



### Personal information

**Surname(s) / First name(s)** **Ioan Alexandru, Ivan**

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**Web page(s)** <http://www.femto-st.fr/~ioanalexandru.ivan/>

**Nationality** Romanian

**Date of birth** 03/01/1976, Bucharest

**Gender** Male

### Desired employment / Occupational field

#### Research, Development and Higher Education in (Micro)Electronics and Automation

### Work experience

<b>Dates</b>	February 2007 <i>onwards</i>
<b>Occupation or position held</b>	Universitary Lecturer (permanent position)
<b>Main activities and responsibilities</b>	Research activities. Teaching activities: courses, seminary and/or laboratory classes (sensors and transducers, programmable logic controllers, microprocessor systems, virtual instrumentation etc.).
<b>Name and address of employer</b>	Valahia University of Târgoviște, Electrical Engineering Faculty, B-dul Unirii Nr. 18-20, Târgoviște 130082, Romania
<b>Type of business or sector</b>	Higher education, scientific research
<b>Dates</b>	July 2010 – September 2011
<b>Occupation or position held</b>	Research Engineer (fixed-term contract)
<b>Main activities and responsibilities</b>	Research activities in piezoelectric microsystems under the French Project Maturation Bourgogne – Franche-Comté : « Commande innovante pour les actionneurs piézoélectriques AFM (microscope à force atomique) » (Novel command for AFM (Atomic Force Microscopes) piezoelectric actuators).
<b>Name and address of employer</b>	FEMTO-ST Institute, Automatic Control and Micro-Mechatronic Systems Department (AS2M), 24 rue Alain Savary, 25000, Besancon, France
<b>Type of business or sector</b>	Scientific research and development
<b>Dates</b>	July 2008 – July 2010
<b>Occupation or position held</b>	Marie Curie PostDoc Fellow (fixed-term contract)
<b>Main activities and responsibilities</b>	Research activities in piezoelectric microsystems under European Contract FP7-PEOPLE-2007-2-1-IEF 219412/2007 "New Micro-Robotic Systems featuring Piezoelectric Adaptive MicroStructures for Sensing and Actuating, with Associated Embedded Control" (MicroPADS)

Name and address of employer	FEMTO-ST Institute, Automatic Control and Micro-Mechatronic Systems Department (AS2M), 24 rue Alain Savary, 25000, Besancon, France
Type of business or sector	Scientific research – academia
Dates	October 2007 – May 2008
Occupation or position held	Universitary Lecturer (part-time contract)
Main activities and responsibilities	Teaching activities: courses, seminary and/or laboratory classes (sensors and transducers, automation of petroleum industry processes).
Name and address of employer	Ovidius University of Constanta, Faculty of Physics, Chemistry, Electronics and Petroleum Technology, Bd. Mamaia Nr. 124, Constanța, 900572, Romania
Type of business or sector	Higher education
Dates	June 2003 – May 2005 (three stages of 12 months in total)
Occupation or position held	Appointed Researcher (scholarship)
Main activities and responsibilities	Research activity in microelectronic piezoelectric resonators performed under European Project G6RD-CT-2002-00648 "Multi-channel Measurement and Control System Based on Resonant Piezoelectric Crystal Sensors" (QxSENS).
Name and address of employer	École Nationale Supérieure de Mécanique et des Microtechniques (ENSMM), Laboratoire LCEP, 26 Chemin de l'Épitaphe, 25030 Besançon, France
Type of business or sector	Scientific research
Dates	October 1999 – February 2007 (with breaks of a 12 months total)
Occupation or position held	University assistant (permanent position)
Main activities and responsibilities	<ul style="list-style-type: none"> <li>- Teaching activities: seminary and laboratory classes (sensors and transducers, programmable logic controllers, computer basics, C programming, virtual instrumentation).</li> <li>- Research activities carried under a number of 6 national and European R&amp;D Contracts (photovoltaic solar systems, data acquisition, microtechnologies)</li> </ul>
Name and address of employer	Valahia University of Târgoviște, Electrical Engineering Faculty, B-dul Unirii Nr. 18-20, Târgoviște 130082, Romania
Type of business or sector	Higher education, scientific research

## Education and training

Dates	2002-2006
Title of qualification awarded	Doctorate's degree
Principal subjects/occupational skills covered	Thesis Title: "Utilisation des résonateurs piézoélectriques fonctionnant en mode d'épaisseur pour la réalisation de capteurs (Utilisation of piezoelectrical resonators operating in thickness-shear mode for the realisation of sensors)". Skills covered: electronics, microtechnology, programming.
Name and type of organisation providing education and training	Diploma issued by l'Université de Franche-Comté (France). Research activity held to École Nationale Supérieure de Mécanique et des Microtechniques, FEMTO-ST / LCEP Department and to the Polytechnic University of Bucharest (Romania), Faculty of Electronics and ICT.
Dates	1999-2000
Title of qualification awarded	Master's degree equivalent
Principal subjects/occupational skills covered	Modern systems for process control and for information processing and transmission.
Name and type of organisation providing education and training	Valahia University of Târgoviște (Romania), Faculty of Electrical Engineering.
Dates	1999-2000
Title of qualification awarded	Master's degree equivalent

Principal subjects/occupational skills covered	Metrology, Data analysis, Digital systems.
Name and type of organisation providing education and training	University of Bucharest (Romania). Faculty of Physics.
Dates	1994-1999
Title of qualification awarded	Engineer's diploma
Principal subjects/occupational skills covered	Technological Physics, Metrology, Nondestructive testing (NDT).
Name and type of organisation providing education and training	University of Bucharest (Romania). Faculty of Physics.

### Personal skills and competences

Mother tongue(s) **Romanian**

Other language(s)

Self-assessment  
*European level (\*)*

**French**

**English**

**Italian**

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C2	Proficient user	C1	Proficient user	C2	Proficient user	C2	Proficient user	C1	Proficient user
C1	Proficient user	C1	Proficient user	C1	Proficient user	C2	Proficient user	C1	Proficient user
A1	Basic user	A2	Basic user	A1	Basic user	A1	Basic user	A1	Basic user

(\*) *Common European Framework of Reference for Languages*

Social skills and competences	Ability to understand and handle practical complex problems. Structured thinking, capacity to synthesize, mediating skills.
Organisational skills and competences	Experienced in coordinating >30 students diploma projects (BSc and MSc level). Organizer of a sensors and transducers laboratory at Valahia University of Targoviste, Romania. In charge with technical proposal writing of several national and European research projects Technical coordinator of two OSEO projects, France and one CNCS project, Romania. Co-organization of a tutorial day in <i>Dynamics, characterization and control at the micro/nano scale</i> during the IEEE ICRA 2011 conference
Technical skills and competences	Main research interests: Microsystems design, implementation, identification and control (piezoelectric sensors and actuators, resonators, MEMS, electronic circuits). Photovoltaic PV systems.  Other technical skills: Analog and digital electronics PCB design (CadSoft Eagle Layout) and testing. Microcontroller assembler code programming (Microchip Mplab IDE) Industrial programmable controllers IEC 61131-3 languages (Schneider PLCs, IsaGRAF) Virtual instrumentation and data acquisition (National Instruments LabVIEW)
Computer skills and competences	European Computer Driving Licence (ECDL) instructor level on MS Windows XP, MS Office, Internet. Software programming (MS VisualBasic, VBA macros, Borland C, Pascal). Scientific programming software (Matlab – Simulink) data analysis and presentation (OriginLab). Graphics Editors (Adobe Photoshop, PSP)
Other skills and competences	FEA, CAD: (COMSOL Multiphysics, some knowledge of Ansys Multiphysics, Solid Works, AutoCAD). Some knowledge of FPGA / CPLD (Altera Max plus II, Xilinx ISE).
Driving licence	B-category driving license.

**Additional information****HABILITATIONS:**

Qualification as Associate Professor in the section 61 (*computer engineering, automatic control and signal processing*) delivered by the French authority CNU (Conseil National des Universités).  
Qualification national number: 11261220566 / 2011.

**AWARDS:**

1998: Performance scholarship for undergraduate student communication (in data analysis), Faculty of Physics, University of Bucharest, Romania

2005: "Alfons Ifrim Award" for best young researcher presentation (in piezoelectric resonators), International Symposium of Electrical Engineering - ISEE, Romania

2010: 1st prize and 2mm dash world record on IEEE-NIST Mobile Microrobotics Challenge held at ICRA Conference, United States (team technical leader). The prize figured in the outstanding facts list of the French National Research Council ("faits marquants CNRS 2011").

**PUBLICATIONS, PROJECTS:**

Co-author of three technical books in Romanian and French (see Annexes).

Co-author to eight ISI journal papers.

Co-author of twelve articles submitted to international scientific conferences

Participation to several workshops and regional conferences.

Participation to four European and several national (French and Romanian) research projects.

**SHORT COURSES ATTENDED:**

Romania 1999: English language course and certificate. Romania 2002: French language certificate issued by the cultural service of the French Embassy. Germany 2001: photovoltaic systems; Italy 2004: vibrations measurement techniques; France 2003-2005: piezoelectric resonators. Italy 2009: Comsol Multiphysics.

**Annexes**

A. List of scientific publications.

B. List of research projects

## Annex A: List of scientific publications

### Books

1. **Ioan Alexandru IVAN**, "Utilizarea rezonatoarelor piezoelectrice functionand in moduri de grosime pentru realizarea senzorilor - Utilisation des résonateurs piézoélectriques fonctionnant en modes d'épaisseur pour la réalisation de capteurs", Ed. Bibliotheca Romania, 2007 (in French and in Romanian)
2. Gabriel Predusă, Florian Ion, **Alexandru Ivan**, Eugenia Mincă, "Sisteme de conversie și achiziții de date" (Data conversion and acquisition systems), Ed. Bibliotheca Romania, 2005 (in Romanian)
3. Cornel Cobianu, Gheorghe Valerică Cimpoca, **Ioan Alexandru Ivan**, "Senzori și Traductoare – Manual pentru Laborator", (Sensors and transducers – laboratory class manual) Ed. Printech Romania, 2001 (in Romanian)

### Book chapters

1. **Ioan Alexandru IVAN**, Micky Rakotondrabe, Philippe Lutz and Nicolas Chaillet, "Self-sensing measurement in piezoelectric cantilevered actuators for micromanipulation and microassembly contexts" book chapter in "Signal Measurement and Estimation Techniques for Micro and Nanotechnology" Edited by Cédric Clévy et al. in Springer Science + Business Media, ISBN 978-1-4419-9945-0, DOI 10.1007/978-1-4419-9945-7, 2011.

### Patents

1. **Ioan Alexandru IVAN** and Micky RAKOTONDRABE ,
  - International WIPO No. WO 2011/135254: "Microactuator and microclamp"
  - French INPI patent No. FR2959437 : "Micro-actionneur et micro-pince", Priority date: 2010-04-30. Initial submission No. FR 10 53377.
2. **Ioan Alexandru IVAN**, Joel AGNUS and Micky RAKOTONDRABE,
  - French INPI patent pending, No. 1252544 : "Procédé de micropositionnement à multi degrés de liberté pour actionneurs piézoélectriques et dispositif associé"
3. **Ioan Alexandru IVAN**, Mihai ARDELEANU, Veronica DESPA,
  - Romanian OSIM patent pending, No. A/00471 : "Dispozitiv de actionare magneto-pezoelectric pentru micromanipulare"

### Journal Papers

1. **Ioan Alexandru Ivan**, Mohamed Kharboutly, Joël Agnus, Micky Rakotondrabe, Gilgueng Hwang, Nicolas Chaillet and Stéphane Régner, An impulsive and space-dependant 2-DoF control of MagPieR: the magnetic and piezoelectric microrobot, Applied Physics Letters, 2012 (status: submitted).
2. Micky RAKOTONDRABE, **Ioan Alexandru IVAN**, Sofiane KHADRAOUI, Philippe LUTZ and Nicolas CHAILLET, Complete self-sensing of displacement and force in piezoelectric actuators dedicated to controlled micropositioning tasks, IEEE/ASME Transactions on Mechatronics (T-MECH), 2012 (status: revision submitted).
3. Ion Lungu, Micky Rakotondrabe, Simona Noveanu, **Ioan Alexandru Ivan** and Dan Mandru, Development and control of a modular family of linear and rotary actuators based on shape memory alloy, IFAC Mechatronics, 2012 (status: unde revision).
4. **Ioan Alexandru Ivan**, Gilgueng Hwang, Joel Agnus, Nicolas Chaillet, Stéphane Régner, NIST Microrobotics Challenge. MagPieR: The fastest mobile microrobots in the world, IEEE Robotics and Automation Magazine (RAM), 2012 (status: in press).
5. **Ioan Alexandru Ivan**, Joel Agnus and Pierre Lambert, PMN–PT (lead magnesium niobate–lead titanate) piezoelectric material micromachining by excimer laser ablation and dry etching (DRIE), Sensors and Actuators A: Physical, DOI:10.1016/j.sna.2011.09.015, Vol. 177, pp. 37-47, 2012.

6. Micky Rakotondrabe, **Ioan Alexandru Ivan**, *Development and Force/Position Control of a New Hybrid Thermo-Piezoelectric MicroGripper Dedicated to Micromanipulation Tasks*, IEEE Transactions on Automation Science and Engineering (T-ASE), Vol. 8, No. 4, pp. 824-834, DOI: 10.1109/TASE.2011.2157683, October 2011.
7. Micky RAKOTONDRABE, **Ioan Alexandru IVAN**, Valentin STIHI, Simona NOVEANU, Eugenia MINCA, *Design and modeling of a piezoelectrically actuated microvalve*, Romanian Journal of Physics, ISSN 1221-146X, Vol. 56, nos. 1-2, pp.141-149, 2011
8. **Ioan Alexandru Ivan**, Valentin Stih, Mihaela Ivan, Claudia Stih, Micky Rakotondrabe, Adrian Jelea, *Battery Powered Cost Effective TDS Logger Intended for Water Testing*, Romanian Journal of Physics, ISSN 1221-146X , Vol. 56, nos. 3-4, pp. 540-549, 2011
9. Micky Rakotondrabe, **Ioan Alexandru Ivan**, *Development and dynamic modeling of a new hybrid thermo-piezoelectric micro-actuator*, IEEE Transactions on Robotics (T-RO), DOI.10.1109/TRO.2010.2082032, Vol. 26, No. 6, Pp. 1077-1085, December 2010.
10. Simona NOVEANU, Dan MANDRU, **Ioan Alexandru IVAN** and Vencel CSIBI, *Research Concerning the Ramp and Sinusoidal Command Signals of the Piezoelectric Miniactuators*, Solid State Phenomena, Vols.166-167, pp.321-326, ISSN: 1662-9779, 10.4028/www.scientific.net/SSP.166-167.321, 2010 .
11. **Ioan Alexandru IVAN**, Micky RAKOTONDRABE, Joël AGNUS, Roger BOURQUIN, Nicolas CHAILLET, Philippe LUTZ, Jean-Claude PONCOT, Roland DUFFAIT, Olivier BAUER, *Comparative material study between PZT ceramic and newer crystalline PMN-PT and PZN-PT materials for composite bimorph actuators*, Reviews on Advanced Materials Science (RAMS), No.1/2, Vol.24, pp. 1-9, 2010 .
12. **Ioan Alexandru Ivan**, Micky Rakotondrabe, Philippe Lutz and Nicolas Chaillet, *Current integration force and displacement self-sensing method for cantilevered piezoelectric actuators*. Review of Scientific Instruments (AIP - RSI), Vol.80(12), 2126103, 2009 .
13. **Ioan Alexandru Ivan**, Micky Rakotondrabe, Philippe Lutz and Nicolas Chaillet, *Quasistatic displacement self-sensing method for cantilevered piezoelectric actuators*, Review of Scientific Instruments (AIP - RSI), RSI), Vol.80(6), 065102, 2009 .
14. Roger BOURQUIN, **Ioan Alexandru IVAN**, Bernard DULMET, *Applications of resonant piezoelectric devices to the measurement of physical quantities*, Journal of Optoelectronics and Advanced Materials (JOAM), vol. 10-1, p. 110-116, 2008 .
15. **Ioan Alexandru Ivan**, Gheorghe V. Cimpoca, Matthias Grottk, Valentin Dogaru, Mihaela Ivan, Adrian Jelea, *“Characterization and Comparison Between Silicon and CuInSe2 Photovoltaic Modules”*, Romanian Journal of Physics, Vol.48, Nos.1-4, p.377-383, 2003 .

## International Conference Papers

1. **Ioan Alexandru Ivan**, Joël Agnus, Micky Rakotondrabe, Philippe Lutz and Nicolas Chaillet, *PMN-PT piezoelectric material and related applications in silicon-integrated devices like microactuators and energy harvesters*, 34th International Semiconductor Conference (CAS 2011), ISBN 978-1-61284-172-4, pp.149-152, Sinaia, Romania, 2011
2. Hwang G., **Ivan I.A.**, Agnus J., Rakotondrabe M., Perez Edgar L., Meriemn S., Salmon H., Haliyon S., Chaillet N., Régnier S., Hanghiri-Gosnet A.M. *Remotely powered floating microswimmers as colloidal microparticle manipulators*, 37th International Conference on Micro and Nano Engineering, MNE 2011, Berlin, Germany, 2011.
3. **Ioan Alexandru Ivan**, Joel Agnus, Micky Rakotondrabe, Philippe Lutz, Nicolas Chaillet, *Microfabricated PMN-PT on Silicon cantilevers with improved static and dynamic piezoelectric actuation: development, characterization and control*, IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM2011), ISBN 978-1-4577-0837-4, pp. 403-408, Budapest, Hungary, 2011 .
4. **Ioan Alexandru Ivan**, Gilgueng Hwang, Joel Agnus, Micky Rakotondrabe, Nicolas Chaillet, Stephane Regnier, *First experiments on MagPieR: a planar wireless magnetic and piezoelectric microrobot*, IEEE International Conference on Robotics and Automation (ICRA), ISBN 978-1-61284-380-3/11/ pp. 102-108, Shanghai, China, 2011 (*invited session paper*).
5. Joel Agnus, **Ioan Alexandru Ivan** and Samuel Queste, *Dry etching of single crystal PMN-PT piezoelectric material*, 24<sup>th</sup> IEEE Int. Conf. in Micro-Electro-Mechanical Systems – IEEE MEMS 2011, ISBN 978-1-4244-9633-4, pp. 237-240, Cancun, Mexico, 2011
6. Simona NOVEANU, Dan MANDRU, **Ioan Alexandru IVAN** and Vencel CSIBI, *Design and Modelling a Mini-System with Piezoelectric Actuation*, 3rd European Conference on Mechanism Science (EUCOMES), Cluj-Napoca, Romania, 2010. Published into Mechanisms and Machine Science Vol. 5 (New trends in Mechanism Science) Springer Ed., pp 125-133, ISBN 978-90-481-9688-3 , DOI 10.1007/978-90-481-9689-0\_15, 2010
7. Micky Rakotondrabe, **Ioan Alexandru Ivan**, Sofiane Khadraoui, Cedric Cleve, Philippe Lutz, and Nicolas Chaillet, *Dynamic Displacement Self Sensing and Robust Control of Cantilever Piezoelectric Actuators Dedicated for Microassembly*, IEEE/ASME International Conference on Advanced Intelligent Mechatronics, pp. 557-562, Montreal, Canada, 2010.
8. Micky Rakotondrabe, Cedric Cleve, **Ioan Alexandru Ivan** and Nicolas Chaillet, *Observer Techniques Applied to the Control of Piezoelectric Microactuators*, IEEE International Conference on Robotics and Automation - Workshop "Signals Measurement and Estimation Techniques Issues in the Micro/Nano-World" (IEEE ICRA - WS 2010) Anchorage USA, 2010



9. Micky Rakotondrabe, **Ioan Alexandru Ivan**, *Principle, characterization and control of a new hybrid thermo-piezoelectric microactuator*, IEEE International Conference on Robotics and Automation (ICRA), DOI 10.1109/ROBOT.2010.5509922 pp.1580-1585, Anchorage USA, 2010.
10. **Ioan Alexandru Ivan**, Micky Rakotondrabe and Nicolas Chaillet, *High Coupling Factor Piezoelectric Materials for Bending Actuators: Analytical and Finite Elements Modeling Results*, 2009 European COMSOL Conference, ISBN: 978-0-9825697-2-6, Milano Italy, 2009 .
11. G. Mantescu, N. Olariu, F. Iordache, **A. Ivan**, C. Dumitrache, F. Ispas, D. Let, L. Olteanu, M. Dumitru, *Development of specific thermal components to improve the performances of PV standard modules*, 22nd European PV Solar Conference and Exhibition, pp. 2573-2576, ISBN 3-936338-22-1, Milano, Italy, 2007 .
12. **I. A. Ivan**, R. Bourquin, B. Dulmet, *"Dual Mode, Multiple Electrodes Quartz Sensor"*, Proceedings to the 2005 IEEE International Ultrasonics Symposium, Vols 1-4, p. 1262-1265, Rotterdam, Netherlands, 2005 .
13. Bernard Dulmet, Lozan Spassov, Roger Bourquin, **Alexandru Ivan**, T. Angelov, Julian Lazarov, *"Design of New Miniature Resonant Temperature Temperature Sensor in NLC-cut of Quartz"*, Proceedings to the 19th European Frequency and Time Forum EFTF, p. 621-628, France, 2005 .
14. Lozan. Spassov, Radka Velcheva, L. Vergov, Roger Bourquin, **Alexandru Ivan**, Bernard Dulmet, *"Investigations of Electrical Parameters and Mode Patterns of NLC Quartz Resonators at Low Temperature"*, Proceedings to the 18th European Frequency and Time Forum EFTF, United Kingdom, 2004 .
15. Nicolae Olariu, Florin Ispas, **Alexandru Ivan**, Dorin Let, Gabriela Mantescu, Elena Vaduva, Liviu Olteanu, *"Testing Results of the First Romanian BIPV Application"* Proceedings to the 19th Photovoltaic Solar Energy Conference (EU PVSEC), pp. 2935-2938, France, 2004 .
16. Matthias Grottko, Peter Helm, A.Hofer, Nicolae Olariu, **Ivan Alexandru**, Stanislaw Pietruszko, D. Mavrotas, *"First Grid – Connected PV System in Romania"*, Proceedings to the 17th Photovoltaic Solar Energy Conference (EU PVSEC), Germany, 2001 .

## Regional or National Conferences and Workshops

1. D. Let, A. Stancu, M. Ivan, **I. A. Ivan**, V. Stefan, *Aplicație de conducere și management energetic la distanță pentru locuințe "inteligente"*, 7th National Conference on New and Renewable Energy Sources CNSNRE, Bucharest Romania, 2007 (in Romanian)
2. **I. A. Ivan**, R. Bourquin, Gh. V. Cimpoca, *"Precise Temperature and Force Sensing with Quartz Thickness-Shear Resonators"*, Proceedings to 51st IWK, Technische Universität Ilmenau Germany, 2006
3. **I. A. Ivan**, M. Ivan, F. Dragomir, E. Mincă, O. Dragomir, V. Petrovici, *"Distributed architecture for interfacing quartz dual mode sensors"*, Proceedings to the 5th International Symposium on Electrical Engineering, Targoviste Romania 2005
4. **Ioan Alexandru Ivan**, Mihaela Ivan, *Virtual instrumentation for photovoltaic systems ("Instrumentație virtuală pentru sisteme fotovoltaice")*, Al doilea Simpozion Internațional Mecatronică, Microtehnologii și Materiale Noi, p.1121-27, 2004 (in Romanian)
5. **Ioan Alexandru Ivan**, Roger Bourquin, Bernard Dulmet, *"Metode de investigare pe rezonatori termo-senzitivi folosind topografie pe raze X (Investigations on Thermosensitive Resonators by X-Ray Topography)"*, Al doilea Simpozion Internațional Mecatronică, Microtehnologii și Materiale Noi, p. 1128-37, Romania, 2004 (in Romanian)
6. Cristian Dumitrache, **Ioan Alexandru Ivan**, *"Peltier TEC Model (Model Simulink pentru Termoelement Peltier)"*, Al doilea Simpozion Internațional Mecatronică, Microtehnologii și Materiale Noi, p. 1138-42, Romania, 2004
7. **I. A. Ivan**, F. Ispas, M. Ivan, G. Ispas, A. Jelea, *Low cost systems PV systems operating and monitoring - Part I: Data acquisition systems ("Sisteme de cost redus pentru operarea și monitorizarea instalațiilor PV - Partea I-a: Sisteme de achiziție")*, National Conference on New and Renewable Energy Sources CNSNRE, Romania, 2004 (in Romanian)
8. **I. A. Ivan**, F. Ispas, M. Ivan, G. Ispas, A. Jelea, *Low cost systems PV systems operating and monitoring - Part II: Microcontroller-based solar and thermal regulators ("Sisteme de cost redus pentru operarea și monitorizarea instalațiilor PV - Partea a II-a: Reglatoare solare și termice cu microcontroller")*, National Conference on New and Renewable Energy Sources CNSNRE, Romania, 2004 (in Romanian)
9. Valentin Dogaru Ulieru, Nicolae Olariu, Horia Andrei, Gheorghe Cimpoca, **Ioan Alexandru Ivan**, *"Producing Electric Energy Using Photovoltaic Systems"*, The Annals of Valahia University of Targoviste, Romania, p.115-122, 2002

## Annex B: *List of research projects*

### European Projects

1. European Grant FP7-PEOPLE-ERG 276991/2010 "MicroElectroMechanical Generators Based on High Performance Piezoelectric Materials" - MICROGENS". **Grantee, Marie Curie reintegration grant**, from 2011 to 2014. Budget 45k€.
2. European Grant FP7-PEOPLE 219412/2007 "New Micro-Robotic Systems featuring Piezoelectric Adaptive MicroStructures for Sensing and Actuating, with Associated Embedded Control" – MicroPADS. URL: <http://www.femto-st.fr/micropads/> . **Grantee, Marie Curie Intra European Fellowship** for 24 months between 2008 and 2010. Budget 170k€.
3. European Project G6RD-CT-2002-00648 "Multi-channel Measurement and Control System Based on Resonant Piezoelectric Crystal Sensors" – QxSENS. URL: <http://eapclu.iap.tuwien.ac.at/www/qxsens/> . **PhD contract** between 2003 and 2005.
4. INCO/COPERNICUS European Project ICOP-DEMO 4080/98 "Building Integration of Solar Technology". Involved as participant between 2001 and 2002.

### National Projects (selection among most representative)

1. Romanian project PN-II-RU-TE-2011-3-0299 no. 0490, "Advanced devices for micro and nanoscale manipulation and characterization (ADMAN)" , **Project coordinator**, from 2011 to 2014. Budget 220k€.
2. French Project Maturation Bourgogne – Franche-Comté & OSEO Innovation: "Commande innovante pour les actionneurs piézoélectriques AFM (microscope à force atomique) - Novel command for AFM (Atomic Force Microscopes) piezoelectric actuators" (AFM Innovant), **Project technical supervisor**, in 2010-2011. Budget 70k€.
3. French Grant OSEO Innovation (Aides jeunes) J09040051/2009: "Etude de faisabilité de nouveaux micro-actionneurs piézoélectriques. Actionneurs piézoélectriques réalisés à partir de la technologie de report-amincissement sur silicium, de lames minces réalisées dans un nouveau matériau monocristallin à couplage géant" – MiniLACUSON. **Project technical vice-supervisor**, in 2009. Budget 10k€.
4. Romanian Project PNCDI-II 2469/2007 "Contribuția României la țintele europene privind dezvoltarea surselor regenerabile de energie" (Contribution of Romania to the European targets regarding the development of renewable energy sources) – PROMES. URL: <http://terra.ici.ro/promes/> . Participant, 2008-2009. Budget 200k€.
5. Romanian Project PNCDI-II 1768/2007 "Sistem de microsenzori piezoelectrice, de masurare, analiza si control multiparametru, integrat 3D" (Piezoelectric microsensors system, 3D integrated, for multiparameter measurement, analysis and control) – PIEZOSENZ. URL: <http://www.imt.ro/piezosenz/> . **In charge with project technical proposal**. Participant in 2007-2008. Budget 200k€.
6. Romanian Project CEEX 792/2005 "Microstructuri de senzori și actuatori destinate micropoziționării și micromanipulării mecanice și biologice" (Sensors and actuators microstructures for microrobotic positioning, mechanical and biological manipulation) – MEMSAS. URL: [http://www.imt.ro/mems\\_as/memsas\\_en.html](http://www.imt.ro/mems_as/memsas_en.html) . Participant in 2006.
7. Romanian Project CEEX-M3-C3 "Promovarea cercetării științifice interdisciplinare din domeniul materialelor nanostructurate pentru celule solare din generația a III-a prin colaborare europeană" (Promoting scientific interdisciplinary research in nanostructured materials field for 3<sup>rd</sup> generation solar cells by European collaboration) – NANOSOL-NET. URL: <http://www.univ-ovidius.ro/girtu/NanoSolNet/press.htm> . Participant in 2006-2008.
8. Romanian Project CEEX 605/2005 "Complementaritatea surselor fotovoltaice și a captatoarelor termice în arhitectura clădirilor și asigurarea utilității de energie electrică și climatizare" (Complementary photovoltaic and thermal panels integration in buildings architecture and providing electric energy and air conditioning utilities) – CoFoTerm. URL: <http://dcem.valahia.ro/cofoterm/> . Participant in 2005-2007.
9. Romanian Project MATNANTECH" nr. 2081143/2002 "Arie de micropelistori pentru detectia gazelor combustibile" (Micropellistor array for explosive gases detection) – AMIC. Participant in 2002-2004.