Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)	**Modreanu, Nicolae Mircea**
Address(es)	Str. Dobrun, Nr. 2, M58, Sc. 1, Apartment 49, Sector 5, postal code 051214, Bucuresti, Romania
Telephone(s)	04 021 589 34 09
Fax(es)	04 021 346 72 90
E-mail	mircea.messico@icpe.ro
Nationality	Romanian
Date of birth	07.12.1955
Gender	Male

Desired employment / Occupational field

Icpe / Research and development of special electric machines

Work experience

- Design, development, small power electric machines production – 30 years in this domain (Product manager – 47 contracts, Contract co-worker – 17 contracts)
- Operating programs as (Word, Excel), Femm, Mathcad
- Proposal, execution and management of research projects - development on national programs (Between 2003 ÷ 2010: Project Manager – 3 projects, Icpe Project Manager Icpe – 3 projects from Programs RELANSIN, Excellency Research and Innovation which belong to the National Plan of Research, Development and Innovation. Between 2012 ÷ 2016: Icpe Technical Manager – 3 projects from Programs Innovation and STAR)
- Proposal, execution and management of international projects (Between 2014 ÷ 2020: Technical Manager for five ESA - European Space Agency projects)

Dates	- Operating programs as (Word, Excel), Femm, Mathcad: since 2003 until present - Proposal, execution and management of research-development on national programs: since 1983 until present - Designing, developing, production of small power electric machines: beginning with 1980 until present
Occupation or position held	Scientific researcher II grade
Main activities and responsibilities	- designing –development of small power electric machines - proposal, execution and management of research- development projects - specialized technical assistance in and outside the company area
Name and address of employer	Icpe, Bucuresti, Splaiul Unirii nr. 313, sect. 3, Postal Code 030138
Type of business or sector	Main activity: Code CAEN 7219: Research- development in other natural sciences and engineering Second activity: Code CAEN 2711: Production of motors, generators and electric transformer

Education and training

Dates	1990÷1999
Title of qualification awarded	Doctorate / Doctor in electric engineering
Principal subjects/occupational skills covered	Electric machines, Electrotechnics bases, Special mathematics / Theoretical and experimental research in the electric machines area
Name and type of organization providing education and training	“POLITEHNICA” University Bucuresti, Electrical Engineering Faculty

Level in national or international classification	National interest of higher education institution- High rate of reliance
Dates	September 1975÷July 1980
Title of qualification awarded	Diploma Electrical Engineer
Principal subjects/occupational skills covered	Machines, Devices and electric automation, Mathematical analysis and Special mathematics, Electrotechnics bases, Physics, Companies organising and leadership / electrical engineering, industrial organising and leadership
Name and type of organisation providing education and training	"POLITEHNICA" University Bucuresti, Electrical Engineering Faculty
Level in national or international classification	National interest of educational superior institution- High rate of reliance

Personal skills and competences

- Research – development of electric machines
- Organising of the research and production activities
- Operating programs as Office and numerical electromagnetic field analysis
- elaboration, communication and publishing of scientific papers: 35 scientific communications, 21 published scientific papers

Mother tongue(s) **Romanian**

Other language(s) **English**

Self-assessment	**Understanding**				**Speaking**				**Writing**	
European level (*)	Listening		Reading		Spoken interaction		Spoken production			
English language	x	Yes	x	Yes	x	Yes		No	x	Yes

Language

(*) Common European Framework of Reference for Languages

Social skills and competences

Organisational skills and competences
- Organising the research-development activities / Post-graduate course "Research- development leadership" finished in 1988 at the POLITEHNICA University of Bucuresti and experience gained as a manager of the research-development projects

Technical skills and competences
- Designing electric / faculty orientation and workplace specificity
- Development (prototypes and small - scale production) in the electric machine domain/ faculty orientation and workplace specificity
- Lab Experiments in the electric machine domain/Lab hours during the faculty courses; lab tests and products certification during the workplace hours.

Computer skills and competences
- Operating programs type office (Word, Excel) and numerical analysis of the magnetic field / Participation in research activities, involved in research and development programs including new electric machine types

Artistic skills and competences
It is not the case

Other skills and competences
- Second degree scientific researcher / Researcher contest organised in Icpe;
- Was member in the internal advising committee of the research-development papers from Icpe / Internal decision Icpe;
- Was an evaluator for national programs of C-D-I: RELANSIN program and Grant program;
- Lector at the professional training course Icpe / Professional training course AGIGEA between 2011 ÷ 2018;
- Teaching activities at Academia Tehnică Militară in master's courses between 2013 ÷ 2020.

Driving licence
Yes. B Category

Additional information - Prize for research excellency at RELANSIN program– 2006 for participating at “Optimized actuators for automation of module components for medical assisted devices”.

- Contact: Eng. Cristian BOBOC, Director C4-MESSICO from Icpe, phone 04 021 589 34 09, e-mail cristianboboc.messico@icpe.ro

- References: Eng. Ion PAUNA, Technical Director Icpe, phone 04 021 589 34 78, e-mail ionpauna@icpe.ro

Annexes List any items attached

Date: 04.08.2020

Work experience

The Program/The Project	Position	Period: from…to…
Electrotechnical components for special technique: I guided 10 assimilation projects for the following types of electrotechnical components: dc motors and servomotors, asynchronous two - phase cup rotor servomotor – tachogenerator groups, dc and ac motors.	Icpe Project Manager	1983-1989
Electrotechnical components for industrial applications: I guided 14 assimilation projects for the following types of electrotechnical components: dc motors and servomotors, universal motors, dc tachogenerators, motor – tachogenerator integrated groups	Icpe Project Manager	1983-2000
Assimilation of Electrotechnical components for the export: - I participated in programs developed by ICPE with foreign partners for the assimilation of the following types of electrotechnical components: dc tachogenerators in hollow shaft construction (a variant with classic commutator and a variant with the commutator placed over the coil head), hysteresis synchronous motor stator, drive systems (dc motor with permanent magnet brake, dc motor with dc tachogenerator, dc motor with dc tachogenerator and brake), dc limited angle brushless torque motors, dc brushed torque motors and special three-phase motors.	Icpe Projects Manager or Co-worker	1998-2013
RELANSIN Contract: Accuracy computerized equipment used in the recovery of the leg	Project Manager	2003-2004
RELANSIN Contract: Computerized equipment used in the recovery of the arm	Project Manager	2004-2006
RELANSIN Contract: Actuator optimized solutions for the drive of the component modules of some medical assistive devices	Icpe Project Manager	2004-2006
RELANSIN Contract: Smart active prosthesis for the arm with mioelectric control	Icpe Project Manager	2004-2006
Excellency Research Contract: Assisting/Recovery of the orthostatism and walking with the severely disabled old people and sick people with cardio-breathing problems and/or with neurological-locomotive deficiencies by means of some robot orthotic systems	Icpe Project Manager	2005-2008
INNOVATION Contract: Smart modular systems for low power electrical drives	Project Manager	2008-2010
STAR Contract: Subsystems for Nanosatellites	Icpe Technical Project Manager	2012-2015
INNOVATION Contract: Electromechanical components for high – tech direct drive systems developed with flexible technological lines	Icpe Technical Project Manager	2013-2015
ESA Contract: Electric Motor Technology Spin Into Space	Technical Manager	2014-2018
ESA Contract: Stepper Motor for Multimedia Antenna Deployment & Pointing Mechanism of 2nd generation	Technical Manager	2016-2018
STAR Contract: Reaction Wheel for Spacecraft Attitude Control	Project Manager	2017 - 2019
ESA Contract: Stepper Motor for Deployment and Pointing Mechanisms at Qualification Model - SM2QM, Assessment to Prepare and De -Risk Technology Developments	Technical Manager	2019 - 2020
ESA Contract: - Synchronous Motors for LEO and GEO Applications - SYMOLEG	Key personnel	2020 - 2021

Published or communicated papers

1. **NUMERICAL AND EXPERIMENTAL EVALUATION OF A DC MOTOR WITH PERMANENT MAGNETS** – CD of Innovations and perspectives in the electric machine domain symposium, Fifth edition partnership with the POLITEHNICA University of Bucuresti, Machines, Automation and materials Department, 13 – 14 October 2009, ISSN 1843-5912.

2. **3D FINITE ELEMENT THERMAL ANALYSIS OF A SMALL POWER PM DC MOTOR** - CD of Innovations and perspectives in the electric machine domain symposium, Fifth edition partnership with the POLITEHNICA University of Bucuresti, Machines, Automation and materials Department, 13 – 14 October 2009, ISSN 1843-5912.

3. **ELECTROMAGNETIC AND THERMAL MODELS FOR DC SERVOMOTORS WITH PERMANENT MAGNETS** – Experts forum: Development trend in the electric machine production and recent requirements of EU, POLITEHNICA University of Bucuresti, 15.04. 2010.

4. **3D FINITE ELEMENT THERMAL ANALYSIS OF A SMALL POWER PM DC MOTOR** – OPTIM 2010, 12th International Conference on Optimization of Electrical and Electronic Equipment, Brasov, 20-22 Mai 2010.

5 **NUMERICAL MODELING OF A SMALL POWER HIGH SPEED INDUCTION MOTOR** – The 7th International Symposium on Advanced Topics in Electrical Engineering ATEE 2011, Bucharest, May 12-14, 2011.

6. **INFLUENCE OF Z – 2p COMBINATION ON THE PMSM PERFORMANCES -** EEA, Vol. 61, No. 1, January – March 2013, Electra Publishing House, ISSN 1582-5175.

7. **DESIGN SOLUTIONS FOR REDUCING THE COGGING TORQUE OF PMSM –** Advances in Electrical and Computer Engineering, Volume 13, no. 3, pp. 59-64, August 31 2013, doi:10.4316/AECE.2013.03010, ISSN: 1582-7445, e-ISSN: 1844-7600.

8. **UNITARY DESIGN OF SMALL DC MOTORS USED IN MODULAR ADD-ON ELECTRICAL SYSTEMS –** The 9-th International Symposium on Advanced Topics in Electrical Engineering, 7-9 mai 2015, IEEE Xplore, pag. 188 – 192.

9. **NUMERICAL STUDIES FOR A DC LIMITED ANGLE TORQUE MOTOR** – The 10th International Conference on Electromechanical and Power Systems, Craiova, October 6, Chișinău, October 8-9, 2015.

10. **NUMERICAL STUDIES FOR A DC, LIMITED ANGLE, TORQUE MOTOR, SIZE 16th** – The 11th Symposium on Current and Future Perspectives in Electrical Motors Domain, SME'15, București, October 23, 2015.

11. **MAGNETIC FIELD MODELS FOR A DC TORQUE MOTOR** – Bulletin of the Polytechnic Institute of Iași, Section Electrical Engineering, Power Engineering and Electronics, 2015, Fasc. 4, Politehnium Publishing House, pp. 53-60, ISSN: 1223-8139.

12. **NUMERICAL STUDIES FOR SPECIAL ELECTRIC MACHINES OF THE LIMITED ANGLE TORQUE MOTORS TYPE** - EEA, Vol. 64, No. 3, pp. 12-19, July – September 2016, Electra Publishing House, ISSN 1582-5175.

13. **TRIDIMENSIONAL MODELING FOR A DC, LIMITED ANGLE, TORQUE MOTOR OF SIZE 16th** - International Conference and Exposition on Electrical and Power Engineering, Iași, România, October 20-22, 2016, pp. 235-239, ISBN: 978-1-5090-6129-7/16/$31.00 ©2016 European Union.

14. **DESIGN AND MODELING OF A HYBRID STEPPER MOTOR** – The 10th International Symposium on Advanced Topics in Electrical Engineering, București, March 23–25, 2017, pp.192-195, ISBN: 978-1-5090-5160-1.

15. **ICPE's PROJECTS WITH ESA -** ESA Workshop on Mechanisms Testing and Health Monitoring & 2017 Mechanisms Final Presentation Days, ESA/ESTEC Noordwijk – The Netherlands, March 29-31, 2017.

16. **STEPPER MOTORS FOR SPACE APPLICATIONS – ICPE ACTIVITIES -** 6th CEAS Air & Space Conference, Palace of the Parliament, Bucuresti, October 16-20, 2017.

17. **THERMAL MODELING FOR SPECIAL ELECTRIC MACHINES -** Symposium on Current and Future Perspectives in Electrical Motors Domain, SME'17, București, November 10, 2017.

18. STATE OF THE ART OF ICPE'S PROJECTS WITH ESA - Workshop on Optical Mechanisms and Mechanisms Final Presentation Days, Noordwijk, The Netherlands, 14 ÷ 16 March 2018.

19. ICPE ACHIEVEMENTS IN THE FIELD OF STEPPERS FOR SPACE APPLICATIONS - Space Engineering and Technology Final Presentation Days, Noordwijk, The Netherlands, 18 – 19 June 2018.

20. THERMAL FIELD STUDIES FOR SPECIAL ELECTRIC MACHINES - Symposium on Current and Future Perspectives in Electrical Motors Domain, SME'18, București, November 9, 2018.

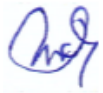
21. ICPE IN THE FIELD OF SPACE - Space Mechanisms Legacy from New ESA players and Mechanisms Final Presentation Days, Noordwijk, The Netherlands, 13 – 15 February 2019.

22. NUMERICAL ANALYSIS OF A HYBRYD STEPPER MOTOR FOR THE ELECTROMAGNETIC TORQUE CALCULATION - The 11th International Symposium on Advanced Topics in Electrical Engineering, Bucharest, România, March 28-30, 2019, pp.1-6, ISBN: 978-1-7281-0101-9/19/$31.00 ©2019 IEEE.

23. DC LIMITED ANGLE TORQUE ELECTRICAL MOTOR - Scientific Bulletin of University „Politehnica" of Bucharest, 2019, series C, Electrical Engineering and Computer Science, No. 1, Vol. 81, Iss. 1, pp.193-202, ISSN 2286-3540.

24. ELECTROMAGNETIC AND THERMAL STUDIES FOR SPECIAL ELECTRIC MACHINES - Current and Future Perspectives in Electrical Motors Domain, University POLITEHNICA of Bucharest, Faculty of Electrical Engineering, Department of Electrical Machines, Materials and Drives, București, România, 2019, ISSN / ISSN-L: 1843-5912, https://www.doi.org/10.36801/apme.2019.1.13.

25. STEPPER MOTOR FOR SPACE MECHANISMS - Workshop on Ball Bearing & PYROTECHNICS and Mechanisms Final Presentation Days, Noordwijk, The Netherlands, 11 – 14 February 2020.



04.08.2020