

## CURRICULUM VITAE MAY 2020

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 Date/Place of Birth: May 7, 1947, Balti, Moldova, USSR  
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### **Academic Experience**

2010 – present: Chief Scientist, Institute of Power Engineering, Chişinău (Kishinev), Republic of Moldova  
 1990 – 2010: Head of the Research Laboratory, Institute of Power Engineering of the Academy of Sc. of Moldova  
 1992 – 1994: Lecturer (part-time), Technical University of Moldova, Chisinau  
 1980 – 1990: Senior Scientist, Institute of Power Engineering of the Academy of Sc. of Moldova  
 1978 – 1979: Junior Scientist, Institute of Power Engineering of the Academy of Sc. of Moldova  
 1975 – 1977: Post-Graduate Student of Moscow Power Engineering Institute, USSR  
 1970 – 1974: Engineer, Senior Engineer of the Department of Energy Cybernetics of the Academy of Sc. of Moldova, Chisinau

### **Senior Visiting Positions in Foreign Universities**

2012 – 2019: University of Seville (Spain) – twelve months  
 2011: University of Bologna (Italy) - two months  
 2005 – 2010: Politecnico di Torino (Turin, Italy) – four years and four months  
 2005: Northeastern University (Boston, USA) – four months  
 2001 – 2002: Aalborg University (Denmark) – twelve months  
 1997 – 2002: The University of Tennessee at Knoxville (USA) – twelve months  
 1994 – 1995: University of Quebec at Trois-Rivieres (Canada) – four months  
 1993 – 2003: Technical University of Budapest (Hungary) – three months

### **Education**

Dr.Sc. (nostrificated as Dr.Habilitat of Sc. by CSA of Moldova) Electrical Engineering, Institute of Electrodynamics of the National Academy of Sciences of Ukraine, Kiev, 1999; Dr.Sc. thesis “Coding pulsewidth modulation for control of voltage source inverters”  
 Ph.D. (Candidate of Sc.) Electrical Engineering, Leningrad Institute of Fine Mechanics and Optics, USSR, 1980; Ph.D. thesis "Thyristor inverters with high-frequency intermediate link and improved waveform of the output voltage"  
 M.Sc. Electrical Engineering, Kishinev Polytechnic Institute, USSR, 1969

### **Major Fields of Expertise**

1. Power electronics; control and modulation strategies for power converters; methods, techniques and algorithms of pulse modulation; spectral analysis, harmonics and sub-harmonics
2. Motors and drives control; multiphase drives with modulated converters; efficiency; reliability; converters for photovoltaic; medium/high-power converters and drives for transport

### **Basic Contribution (Research Statement)**

Elaboration of fundamentals of a novel alternative method of synchronous space-vector modulation for power electronic converters, and its development and dissemination for control of new perspective topologies of converters, ac electric drives, and photovoltaic systems

### **Major 2000s Power Converters/Drives/Renewables Research**

1. Methods of voltage synchronization of three-phase converters with space-vector control (2000-2002, PI of the Int'l Research Project coordinated by Prof. F. Blaabjerg, IEEE Fellow)
2. Algorithms of synchronized PWM combined with AI tools for control of voltage source inverters (2001-2003, PI of the Int'l Project coordinated by Prof. B.K. Bose, IEEE Life Fellow)
3. Modulation schemes and techniques for large converters with low switching frequency (2004-2006, PI of the Int'l Research Project, coordinated by Prof. A.M. Stankovic, IEEE Fellow)
4. Combined and modular converters with synchronized space-vector PWM (2005-07, PI of the FP6 Project coordinated by Prof. F. Profumo, Rector of PoliTo, Minister of Education of Italy)
5. Schemes and algorithms of synchronized PWM for multilevel medium-power and high-power converters and drives (2005-08, PI of the Int'l Research Project coordinated by Prof. F. Profumo)
6. Transformer-based photovoltaic systems on the base of cascaded inverters with synchronized modulation (2008-2010, PI of the Research Project, co-funded by Piedmont Region (Italy))
7. Multiphase power conversion systems with synchronous vector PWM for electric transport and for PV (2011-20, PI of four Int'l Projects, coordinated by Profs. G. Grandi and F. Barrero)

### **Academic Activities**

Reviewer for European and IEEE conferences and symposia

Reviewer for IEEE Transactions on Power Electronics and Industrial Electronics

Member of editorial boards of national and international journals and proceedings

Member of Expert Council of Skolkovo Foundation (Russian Federation)

Independent Expert of Horizon'2020 (H2020) Program of the European Union in "Energy" and "Transport" fields

National Expert of Moldova at H2020 Program Committee, Energy configuration

Official Representative of Moldova at H2020 Program Committee, Transport configuration

### **Invited Talks (Lectures, Seminars, Teaching Courses)**

University of Florence (Italy), 1991

Concordia University (Montreal, Canada), 1994

Technical University of Budapest (Hungary), 1996

The University of Tennessee at Knoxville (USA), 1998

Kielce University of Technology (Poland), 2000

University of Turabo (Puerto-Rico), 2003

Aalborg University (Denmark), 2001

University of Bologna (Italy) 2011

Politecnico di Torino (Turin, Italy), 2007

University of Zilina (Slovakia), 2014, 2015

University of Seville (Spain), 2012

### **Publications**

Two monograph-books, two chapters of books (*Cambridge Scholars Publ., 2016; Springer, 2018*), and more than 250 technical papers in refereed conference proceedings and peer-reviewed journals, including more than 90 IEEE publications, more than 115 publications in Scopus-related journals and proceedings (Hirsch-factor  $h=18$ ), and more than 150 publications in ScholarGoogle-related proceedings (Hirsch-factor  $h=20$ ). The first (main) authorship at more than 90% of all these publications.

### **Patents**

89 Patents and Inventor's Certificates, and this total amount can be grouped into:

Novel methods and techniques of control and modulation for power converters – 38

Advanced electric drive systems supplied by power electronic converters – 10

Original control boards and systems for modulated power converters – 41

The first (main) authorship at more than 90% of all these patents.

**Languages:** English, Italian, Moldovan (Romanian), Russian

## **Internationally Funded Projects, Programs, Fellowships, Grants under leadership of Dr. V.Oleschuk**

1. **Grantee** of the “Soros-Moldova” Foundation, 1992;
2. **Principal Investigator (PI) and Head** (from the Moldovan side) of NATO Collaborative Research Project "Elaboration of A Unified Theory of Digital Modulation & Computer-Aided Design of Modulators for Power Electronic Converters", 1994 – 1996;
3. **PI and Head** (from the Moldovan side) of the Program of Int'l Sc. Collaboration "Feedforward and Feedback Adaptive Control Strategies for Power Converters and Inverters" between the Hungarian Academy of Sc. and Moldovan Academy of Sc., 1994 – 1996;
4. **Grantee** of European Power Electronics and Drives Association, 1997;
5. **PI and Head** (from the Moldovan side) of NATO Collaborative Research Project "Sliding Coding Modulation for Control of Improved Power Electronic Converters", 1997 – 1999;
6. **PI and Head** (from the Moldovan side) of the Program of Int'l Sc. Collaboration "Deterministic and Non-Deterministic Principles of Modulation and Control in Power Conversion Systems" between the Hungarian Academy of Sc. and Moldovan Academy of Sc., 1997 - 2003;
7. **Grantee** with the Long-Term Grant for the Project "Development, Investigation and Dissemination of the Methodology of Coding Modulation for Power Converters" of the COBASE (Collaboration in Basic Science and Engineering) Program of the National Research Council of the USA, 1997 – 1998;
8. **Grantee** of the “Soros-Moldova” Foundation”, 2000;
9. **Fellow** of NATO Senior Fellowships Program in Denmark with the Project "Direct Digital Pulsewidth Modulation for Power Converters with Deterministic and Non-Deterministic Control", 2001–2002;
10. **PI and Head** (from the Moldovan side) of the Project "Power Electronic Converters with Digital Synchronous Modulation Combined with Artificial Intelligence Tools" of the Bilateral Grants Program of the Moldovan R&D Association (MRDA) and the US Civilian R&D Foundation (CRDF), 2001–2003;
11. **PI and Head** (from the Moldovan side) of the Project "Novel Methods of Synchronized Pulsewidth Modulation for Control of Large Converters" of the Cooperative Grants Program of the US Civilian Research & Development Foundation (CRDF), 2004 – 2006;
12. **Fellow** of Marie Curie Int'l Fellowships (IIF) Program of the FP6 Programme of the European Commission with the Project “MODULATED CONVERTERS”, 2005 – 2007;
13. **PI and Head** (from the Moldovan side) of NATO Collaborative Linkage Project "Energy-Saving Power Conversion Systems with Advanced Methods of Synchronised Modulation", 2005 – 2008;
14. **Fellow** of Program of Research Fellowships for Senior Foreign Researchers, co-funded by Piedmont Region (Italy), 2008 – 2010;
15. **Professorship** in the range of Program of Professorships of the Institute of Advanced Studies of the University of Bologna (Italy), 2011;
16. **Grantee** of the Ministry of Education of Spain for collaboration with the University of Seville, 2012;
17. **Head and PI** of Regular Research Project of STCU, funded 50/50 by the USA and EU, “Power Converters with Synchronized Modulation for Electric Vehicles and for Photovoltaic Systems”, 2013-16;
18. **Head and PI** of Regular Research Project of STCU, funded by the EU, “Multifunctional Power Converters with Advanced Methods of Synchronous Space-Vector Modulation”, 2018 - 2020.

## **References**

1. Professor B.K. Bose, Life Fellow of IEEE, Condra Chair of Excellence in Power Electronics, The University of Tennessee at Knoxville, USA. Tel. +865-974-8398, Fax: +865-974-5483, e-mail: [bbose@utk.edu](mailto:bbose@utk.edu)
2. Professor A.M. Stankovic, Fellow of IEEE, A.H. Howell Professor, Tufts University, Medford, MA, USA. Tel. +617-627-5179, Fax: +617-627-3220, e-mail: [astankov@ece.tufts.edu](mailto:astankov@ece.tufts.edu)
3. Professor F. Blaabjerg, Fellow of IEEE, Aalborg University, Denmark. Tel. +45-2129-2454, Fax: +45-9815-1411, e-mail: [fbl@et.aau.dk](mailto:fbl@et.aau.dk)
4. Professor M.P. Kazmierkowski, Fellow of IEEE, Warsaw University of Technology, Poland. Tel. +48-22-234-7675, Fax: +48-22-625-6633; e-mail: [mpk@isep.pw.edu.pl](mailto:mpk@isep.pw.edu.pl)
5. Professor F. Barrero, IEEE Senior Member, University of Seville, Spain. Tel. +34-9544-81304, Fax: +34-9544-87372, e-mail: [fbarrero@us.es](mailto:fbarrero@us.es)
6. Professor E. Levi, Fellow of IEEE, Liverpool John Moores University, United Kingdom. Tel. +44-(0)-151-231-2257, Fax: +44-(0)-151-298-2624, e-mail: [e.levi@ljmu.ac.uk](mailto:e.levi@ljmu.ac.uk)