

SHORT CURRICULUM VITAE

SECHILARIU Manuela

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Current affiliation: Université de Technologie de Compiègne (UTC)
Centre Pierre Guillaumat, rue du Dr. Schweitzer, 60200 Compiègne, FRANCE

Career:

2002 - present Université de Technologie de Compiègne, since 2016 **Full Professor**
Research: Laboratory AVENUES EA 7284, since 2016 **Director**
Teaching: Department Génie des Systèmes Urbains (GSU) ; Urban System Engineering

1994 - 2002 Université d'Angers, **Associate Professor**
Research: Laboratory LISA EA 4094
Teaching: Institut Universitaire Professionnalisé (IUP) IMIS-ESTHUA

1990 – 1994 Université d'Angers, **PhD Student** and part-time **Lecturer**
Research: Laboratory LISA EA 4094
Teaching: IUP IMIS-ESTHUA

1988 – 1990 Polytechnic Institute of Iasi, Romania, **Assistant Professor**
Research: Electrical Engineering Research Laboratory
Teaching: Electrical Engineering Department

1986 – 1988 **Research and Development Engineer** ITRD Pascani, Romania

Academic background (titles, diplomas):

2013 HDR (Habilitation à Diriger des Recherches, Accreditation to Supervise Research) French title required for Full Professor, Université de Technologie de Compiègne
Title: Distributed renewable electricity. Urban microgrids and smart grid
Laboratory: AVENUES EA 7284
Date: Thesis defended on 9th of July 2013

1993 PhD in Electrical and Automation Engineering, Université d'Angers
Title: Use of colored and timed Petri Nets for modelling and simulation of rectifier and inverter circuits
Laboratory: LISA EA 4094, Université d'Angers
Date: Thesis defended on 26th of November 1993

1986 Electrical Engineering Degree (bachelor and master) Institutul Politecnic Iasi, Romania

Language:	<i>speaking</i>	<i>reading</i>	<i>writing</i>
French	excellent	excellent	excellent
English	very good	excellent	excellent
Romanian	excellent	excellent	excellent

Current research topics: Supervisory control for smart DC microgrid: design and power optimization, Intelligent DC microgrid with smart grid communications, Building-integrated microgrid and local energy management, Renewable energy, Photovoltaic, Smart grid, Microgrid

Research keywords: urban microgrid, smart grid, microgrid, photovoltaic, wind turbine, hierarchical control, supervision, prediction, optimization and control

Main scientific responsibilities

Director of research laboratory AVENUES EA 7284 (<https://avenues.utc.fr/presentation/laboratoire-avenues.html>)
Member of CNU 63rd section (National Council of Universities for Photonic, electrical and electronic engineering)
Head of French research network Microgrids (<http://seeds.cnrs.fr/spip.php?article132>)
Director and co-supervisor of 11 PhD theses (6 defended theses and 5 advised theses)
Scientific responsible for 6 national and regional research grants and 11 industrial contracts
PhD/HDR thesis committee (president, examiner and reviewer) except the PhD directions: 8 PhD and 1 HDR
Member of Expert Recruiting Committee in Electrical Eng. for Assoc. Professor and Full Professor

Design, development and management of the experimental platforms

- **PLER:** Building-integrated microgrid based on 2kW photovoltaic panels, micro wind turbine 1kVA, storage, central data acquisition, public grid, and load emulators.
- **STELLA:** Microgrid for electric vehicle charging station based on 30kW photovoltaic panels, storage, central data acquisition, public grid, and load emulators.

Publications: 1 scientific book, 7 scientific book chapters, 19 scientific articles in international scientific journals with peer review and listed in international databases, 4 scientific articles in national scientific journals with peer review, 41 articles in international congress with peer review and listed in international databases, 14 articles in national congress with peer review, 13 articles for scientific divulgation.

Bibliometric:

ISI: 442 citations; h-index: 9; researcher ID: B-9693-2013; (<http://www.researcherid.com/rid/B-9693-2013>)

SCOPUS: author ID: 35932845600; 595 citations; h-index: 10

ORCID: <http://orcid.org/0000-0002-7358-4671>

MENDELEY: <https://www.mendeley.com/profiles/manuela-sechilariu/>

PUBLONS: <https://publons.com/author/562082/manuela-sechilariu#profile>

GOOGLE SCHOLAR: <http://scholar.google.fr/citations?hl=fr&user=ZVbuyNwAAAAJ>

Scientific expertise:

- Expert / reviewer for national and international grants:
 - Czech Science Foundation GACR*, Intelligent control and management of energy systems
 - ANR (AAP Generic Evaluation), ANRT CIFRE
 - ANR PROGELEC Renewable electricity production and management; ANR Habisol Smart building
 - CNRS Interdisciplinary Energy Program (PIE)
- Reviewer for scientific articles in international scientific journals: ELSEVIER: IJEPES, ECM, MATCOM ; Wiley ETEP ; AIP JRSE ; IET CDS ; MDPI Energies, IEEE: TIE, TPEL, IAS, TSG-PES
- Guest Editor for Buildings, MDPI, Special Issue Advance in Building Integrated Microgrid Systems
- Chairman for the Special Session on Microgrids, International Congres ELECTRIMACS 2017
- Member of scientific committee for ENEFM 2015, ELECTRIMACS 2017

Awards and Recognition

- Knight in the Order of Academic Palms, July 14, 2016
- Outstanding reviewer 2014: within the top 10% of reviewers for Energy Conversion and Management, Elsevier
- IMACS 2014 award: Power flow modeling for multi-source power system with smart grid interaction, vol. 91, p. 119-133, 6th most successful IMACS paper published in 2013 in MATCOM Elsevier

Supervisor of Master of engineering project: more of 100 students

Teaching fields:

- Electrical installations, equipment, and devices (BA01)
- Automation, regulations, control, and smart building (BA05)
- Electricity network for street lighting

Academic activities:

2002-2017: Board member of Urban System Engineering Department Council

2003-2017: Responsible of two engineering teaching units master level (BA01, BA05)

2015-2016: PhD School responsible for AVENUES laboratory

2005-2014: Head of "Systems and networks for built environment", Engineering degree, GSU major (SR)

2004-2017: Member of Expert Recruiting Committee in Electrical Eng. for Assoc. Professor and Full Professor at UTC, ParisTech, INSA Lyon, Normandie University, CentraleSupelec

2003-2005: Responsible of GSU major engineering degree BAT, UTC

2002-2004: Co-responsible, then Head teacher for the master DESS Material, UTC

1998-2002: Member of Expert Recruiting Committee in Electrical Eng. for Associate Professor, Université d'Angers

1994-2002 : Membre élu du Conseil de Perfectionnement de l'IUP IMIS, Université d'Angers

1994-2002: Responsible, president of jury of the 1st year of IUP IMIS (bachelor 2nd year), Université d'Angers

International and national activities and research networks

2016-present: Head of French research network GT Microgrids (CNRS, GDR SEEDS)

2005-present: Member of GDR SEEDS Electric Power Systems in their Social Dimension

2013-2014: Missions to 3 universities of Chile for the creation of double-degree Master of Engineering

2005-2014: Expert and member of the Pre-selection Committee for Roberval scientific literature prize

2009: Expert and author contribution for Petit Larousse dictionary in the discipline Technology - Energies

1998-2002: Member of GDR SDH Hybrid Dynamical Systems

1998: Visiting Professor, Griffith University, School of Engineering, Brisbane, Australia

SELECTED PUBLICATIONS, COMMUNICATIONS (2012-2017)

Scientific book

M. Sechilariu, F. Locment: "Urban DC Microgrid: intelligent control and power flow optimization", Elsevier Inc., Butterworth-Heinemann, ISBN: 978-0-12-803736-2, 306 pages, Cambridge, MA 02139, USA, 2016.
doi:10.1016/B978-0-12-803736-2.01001-X (<http://www.sciencedirect.com/science/book/9780128037362>)

Scientific book chapters

- M. Sechilariu : "Urban DC Microgrids for Advanced Local Energy Management with Smart Grid Communication", Energy Efficiency and Energy Related Materials, Springer Proceedings in Energy, pp. 3-9. 2017, DOI: [10.1007/978-3-319-45677-5_1](https://doi.org/10.1007/978-3-319-45677-5_1). (chapitre publié suite à la communication au congrès 3rd ENEFM2015 International Congress on Energy Efficiency and Energy Related Materials, Oludeniz (Turkey), 19-23 October, 2015).
- M. Sechilariu, F. Locment : "Connecting and Integrating Variable Renewable Electricity in Utility Grid", dans Urban DC Microgrid: Intelligent Control and Power Flow Optimization, Elsevier Inc., pp 1-33, 2016, ISBN :9780128037362. doi:10.1016/B978-0-12-803736-2.00001-3
- M. Sechilariu, F. Locment : "Photovoltaic Source Modeling and Control", dans Urban DC Microgrid: Intelligent Control and Power Flow Optimization, Elsevier Inc., pp 35-91, 2016, ISBN :9780128037362. doi:10.1016/B978-0-12-803736-2.00002-5
- M. Sechilariu, F. Locment : "Backup Power Resources for Microgrid", dans Urban DC Microgrid: Intelligent Control and Power Flow Optimization, Elsevier Inc., pp 93-132, 2016, ISBN :9780128037362. doi:10.1016/B978-0-12-803736-2.00003-7
- M. Sechilariu, F. Locment : "Direct Current Microgrid Power Modeling and Control", dans Urban DC Microgrid: Intelligent Control and Power Flow Optimization, Elsevier Inc., pp 133-170, 2016, ISBN :9780128037362. doi:10.1016/B978-0-12-803736-2.00004-9
- M. Sechilariu, F. Locment : "Direct Current Microgrid Supervisory System Design", dans Urban DC Microgrid: Intelligent Control and Power Flow Optimization, Elsevier Inc., pp 171-208, 2016, ISBN :9780128037362. doi:10.1016/B978-0-12-803736-2.00005-0
- M. Sechilariu, F. Locment : "Experimental Evaluation of Urban Direct Current Microgrid", dans Urban DC Microgrid: Intelligent Control and Power Flow Optimization, Elsevier Inc., pp 209-250, 2016, ISBN :9780128037362. doi:10.1016/B978-0-12-803736-2.00006-2

Scientific articles in international journals with peer review and listed in international databases (ISI Web of Knowledge, Scopus...)

2017

- C. Yin, H.Wu, F. Locment, M. Sechilariu: "Energy management of DC Microgrid based on Photovoltaic Combined with Diesel Generator and Supercapacitor", *Energy Conversion and Management*, vol.132, pp. 14-27, 2017, Impact Factor (IF) 4.801 ; <http://dx.doi.org/10.1016/j.enconman.2016.11.018>
- H. Liu, F. Locment, M. Sechilariu: "Experimental analysis of impact of Maximum Power Point Tracking methods on energy efficiency for small-scale wind energy conversion system", *IET Renewable Power generation*, vol. 11 Issue 2, pp. 389-397, Feb 2017, IF 1.562. DOI: [10.1049/iet-rpg.2016.0083](https://doi.org/10.1049/iet-rpg.2016.0083)

2016

- L. Trigueiro dos Santos, M. Sechilariu, F. Locment : "Optimized Load Shedding Approach for Grid-Connected DC Microgrid Systems under Realistic Constraints", Buildings, **Special Issue on Advance in Building Integrated Microgrid Systems**, vol.6, no.4, 50, pp 1-15, MDPI Ed., December 2016. doi:10.3390/buildings6040050
- H. Al-Ghossini, F. Locment, M. Sechilariu, L. Gagneur, C. Forgez: "Adaptive-tuning of Extended Kalman Filter used in maximum power point tracking for small scale wind generator control", *Renewable Energy*, vol. 85, pp. 1237-1245, Elsevier Ed., January 2016, IF 3.476. doi:10.1016/j.renene.2015.07.073

2015

- M. Sechilariu, F. Locment, B.C. Wang: "Photovoltaic electricity for sustainable building. Efficiency and energy cost reduction for isolated DC microgrid", *Energies*, **Special Issue on Solar Photovoltaics Trilemma: Efficiency, Stability and Cost**, vol. 8, no.8, pp 7945-7967, MDPI Ed., August 2015, IF 2.072. doi:10.3390/en8087945

- F. Locment, M. Sechilariu: "Modeling and Simulation of DC Microgrids for Electric Vehicle Charging Stations", *Energies, Special Issue on Electrical Power and Energy Systems for Transportation Applications*, vol. 8, no.5, pp 4335-4356, MDPI Ed., May 2015, IF 2.072. doi:[10.3390/en8054335](https://doi.org/10.3390/en8054335)

2014

- B. C. Wang, M. Sechilariu, F. Locment: "Simple improved control of phase error compensation for low power operation of PV grid-connected inverter with LCL filter", *European Journal of Electrical Engineering (EJEE)*, Hermes Ed., vol. 17, no. 1-2, pp. 27-45, 2014. <http://dx.doi.org/10.3166/ejee.17.27-45>
- M. Sechilariu, B. C. Wang, F. Locment, A. Jouglet: "DC microgrid power flow optimization by multi-layer supervision control. Design and experimental validation", *Energy Conversion and Management*, vol. 82, pp. 1-10, Elsevier Ed., March 2014, IF 3.590. doi:[10.1016/j.enconman.2014.03.010](https://doi.org/10.1016/j.enconman.2014.03.010)
- M. Sechilariu, B. C. Wang, F. Locment: "Supervision control for optimal energy cost management in DC microgrid: design and simulation", *International Journal of Electrical Power and Energy Systems* vol. 58, pp. 140-149, Elsevier Ed., Feb. 2014, IF 3.432. doi:[10.1016/j.ijepes.2014.01.018](https://doi.org/10.1016/j.ijepes.2014.01.018)

2013

- B. C. Wang, M. Sechilariu, F. Locment: "Power flow Petri Net modelling for building integrated multi-source power system with smart grid interaction", *Mathematics and Computers in Simulation* vol. 91, pp. 119-133, Elsevier Ed., May 2013, IF 0.856. doi:[10.1016/j.matcom.2013.01.006](https://doi.org/10.1016/j.matcom.2013.01.006)
- M. Sechilariu, B. C. Wang, F. Locment: "Building-integrated microgrid: Advanced local energy management for forthcoming smart power grid communication", *Energy and Buildings* vol. 59, pp. 236-243, Elsevier Ed., April 2013, IF 2.465. doi:[10.1016/j.enbuild.2012.12.039](https://doi.org/10.1016/j.enbuild.2012.12.039)
- M. Sechilariu, B. C. Wang, F. Locment: "Building Integrated Photovoltaic System with Energy Storage and Smart Grid Communication", *IEEE Trans. on Industrial Electronics, Special Issue on Distributed Generation and Microgrids*, vol. 60, no. 4, pp. 1607-1618, April 2013, IF 6.500. DOI:[10.1109/TIE.2012.2222852](https://doi.org/10.1109/TIE.2012.2222852)
- Houssamo, F. Locment, M. Sechilariu: "Experimental analysis of impact of MPPT methods on energy efficiency for photovoltaic power systems", *International Journal of Electrical Power and Energy Systems* vol. 46, pp. 98-107, Elsevier Ed., March 2013, IF 3.432. doi:[10.1016/j.ijepes.2012.10.048](https://doi.org/10.1016/j.ijepes.2012.10.048)

2012

- B. C. Wang, M. Sechilariu, F. Locment: "Intelligent DC Microgrid with Smart Grid Communications: Control Strategy Consideration and Design", *IEEE Trans. on Smart Grid, Special Issue on Intelligent Buildings and Home Energy Management in a Smart Grid Environment*, vol. 3, no. 4, pp. 2148-2156, Dec. 2012, IF 4.334. DOI:[10.1109/TSG.2012.2217764](https://doi.org/10.1109/TSG.2012.2217764)
- F. Locment, M. Sechilariu, I. Houssamo: "DC Load and Batteries Control Limitations for Photovoltaic Systems. Experimental Validation", *IEEE Trans. on Power Electronics*, vol. 27, no. 9, pp. 4030-4038, Sept. 2012, IF 5.726. DOI:[10.1109/TPEL.2012.2189134](https://doi.org/10.1109/TPEL.2012.2189134)

Scientific articles in international congress with peer review published and listed in international databases (ISI Web of Knowledge, Scopus...)

2017

- C. Yin, H. Wu, M. Sechilariu, F. Locment : "Energy Management of Standalone DC Microgrid", ELECTRIMACS 2017 (International conference on theory and application of modeling and simulation in electrical power engineering including electric machines, power electronic converters and power systems), pp.1-6, Toulouse (France), 4-6 juillet 2017 (accepted)
- H. Wu, M. Sechilariu, F. Locment : "Operation of a Photovoltaic-Based DC Microgrid with Consideration of Dynamic Efficiency of Converters", ELECTRIMACS 2017 (International conference on theory and application of modeling and simulation in electrical power engineering including electric machines, power electronic converters and power systems), pp.1-6, Toulouse (France), 4-6 juillet 2017 (accepted)

2016

- L. Trigueiro Dos Santos, M. Sechilariu, F. Locment: "Prediction-based Economic Dispatch and Online Optimization for Grid-Connected DC Microgrid", ENERGYCON 2016 (IEEE International Energy Conference), pp.1-6, Leuven (Belgium), 4-8 April 2016, DOI: [10.1109/ENERGYCON.2016.7514024](https://doi.org/10.1109/ENERGYCON.2016.7514024)

- D. K. Tran, L. Trigueiro Dos Santos, M. Sechilariu, F. Locment: "Load Shedding and Restoration Real-Time Optimization for DC Microgrid Power Balancing", ENERGYCON 2016 (IEEE International Energy Conference), pp.1-6, Leuven (Belgium), 4-8 April 2016, DOI: [10.1109/ENERGYCON.2016.7514092](https://doi.org/10.1109/ENERGYCON.2016.7514092)
- C. Yin, M. Sechilariu, F. Locment: "Diesel Generator Slow Dynamic Compensation by Supercapacitors for DC Microgrid Power Balancing", ENERGYCON 2016 (IEEE International Energy Conference), pp.1-6, Leuven (Belgium), 4-8 April 2016, DOI: [10.1109/ENERGYCON.2016.7514058](https://doi.org/10.1109/ENERGYCON.2016.7514058)

2015

- M. Sechilariu: "Urban DC Microgrids for Advanced Local Energy Management with Smart Grid Communication", 3rd ENEFM2015 (International Congress on Energy Efficiency and Energy Related Materials, Oludeniz (Turkey), 19-23 October, 2015, Springer Proceedings in Energy, pp. 3-9. DOI: [10.1007/978-3-319-45677-5](https://doi.org/10.1007/978-3-319-45677-5). **Invited Speaker**
- H. Liu, F. Locment, M. Sechilariu: "Maximum Power Point Tracking Method for Small Scale Wind Generator Experimental validation", SICE'2015 (International conference on Instrumentation, Control, Information Technology and System Integration of the Society of Instrument and Control Engineers of Japan), Hangzhou (China), 28-30 July, 2015, pp. 864-869. DOI: [10.1109/SICE.2015.7285327](https://doi.org/10.1109/SICE.2015.7285327)
- L. Trigueiro Dos Santos, M. Sechilariu, F. Locment: "Prediction-based Optimization for Islanded Microgrid Resources Scheduling and Management", ISIE'2015 (IEEE International Symposium on Industrial Electronics), Buzios (Rio de Janeiro), Brazil, 3-5 June, 2015, pp. 760-765. DOI: [10.1109/ISIE.2015.7281564](https://doi.org/10.1109/ISIE.2015.7281564)
- H. Wu, M. Sechilariu, F. Locment: "Impact of power converters efficiency on building-integrated microgrid", EPE'2015 ECCE Europe (17th European Conference on Power Electronics and Application, Geneva (Suisse), 8-10 September, 2015, pp. 1-10. DOI: [10.1109/EPE.2015.7309297](https://doi.org/10.1109/EPE.2015.7309297)

2014

- H. Al-Ghossini, H. Liu, F. Locment, M. Sechilariu: "Estimation of speed rotation for MPPT used by small scale wind generator integrated in DC microgrid. Experimental validation", IECON'2014 (40th Annual Conference of the IEEE Industrial Electronics Society), Dallas (USA), October 29 - November 1, 2014, pp. 2082-2088. DOI: [10.1109/IECON.2014.7048789](https://doi.org/10.1109/IECON.2014.7048789)
- L. Trigueiro Dos Santos, M. Sechilariu, F. Locment: "Day-ahead microgrid optimal self-scheduling. Comparison between three methods applied to isolated DC microgrid", IECON'2014 (40th Annual Conference of the IEEE Industrial Electronics Society), Dallas (USA), October 29 - November 1, 2014, pp. 2010-2016. DOI: [10.1109/IECON.2014.7048778](https://doi.org/10.1109/IECON.2014.7048778)
- T. Denoix, M. Sechilariu, F. Locment: "Experimental comparison of photovoltaic panel operating cell temperature models", IECON'2014 (40th Annual Conference of the IEEE Industrial Electronics Society), Dallas (USA), October 29 - November 1, 2014, pp. 2089-2095. DOI: [10.1109/IECON.2014.7048790](https://doi.org/10.1109/IECON.2014.7048790)
- M. Sechilariu, B. C. Wang, F. Locment: "Power Management and Optimization for Isolated DC Microgrid", SPEEDAM 2014 (22nd IEEE International Symposium on Power Electronics, Electrical Drives, Automation and Motion), Ischia (Italy), 18-20 June 2014, pp. 1284-1289. DOI: [10.1109/SPEEDAM.2014.6872087](https://doi.org/10.1109/SPEEDAM.2014.6872087)
- F. Locment, M. Sechilariu: "DC Microgrid for Future Electric Vehicle Charging Station Designed by Energetic Macroscopic Representation and Maximum Control Structure", ENERGYCON 2014 (3rd IEEE International Energy Conference), Dubrovnik (Croatia), 13-16 May 2014, pp. 1454-1460. DOI: [10.1109/ENERGYCON.2014.6850614](https://doi.org/10.1109/ENERGYCON.2014.6850614)

2013

- H. Al-Ghossini, F. Locment, M. Sechilariu: "Experimental comparison of small wind turbine vector control with and without position sensor – Extended Kalman Filter application", EPE'13 – ECCE Europe (15th European Conference on Power Electronics and Applications), Lille (France), 2-6 September 2013, pp. 1-9. DOI: [10.1109/EPE.2013.6634437](https://doi.org/10.1109/EPE.2013.6634437)
- H. Al-Ghossini, B. C. Wang, F. Locment, M. Sechilariu: "Energetic macroscopic representation and inversion-based control of DC microgrid", EPE'13 – ECCE Europe (15th European Conference on Power Electronics and Applications), Lille (France), 2-6 September 2013, pp. 1-10. DOI: [10.1109/EPE.2013.6634368](https://doi.org/10.1109/EPE.2013.6634368)
- B. C. Wang, M. Sechilariu, F. Locment: "Intelligent DC Microgrid with Smart Grid Communications: Control Strategy Consideration and Design", IEEE PES GM2013 (IEEE Power & Energy Society General Meeting), Vancouver (Canada), 21-25 July 2013, pp.1. DOI: [10.1109/PESMG.2013.6672112](https://doi.org/10.1109/PESMG.2013.6672112)

2012

- B. C. Wang, I. Houssamo, M. Sechilariu, F. Locment: "A simple PV constrained production control strategy", ISIE 2012 (IEEE International Symposium on Industrial Electronics), Hangzhou, Zhejiang (China), 28-31 May 2012, pp. 969-974. DOI: [10.1109/ISIE.2012.6237220](https://doi.org/10.1109/ISIE.2012.6237220)

- Houssamo, B. C. Wang, M. Sechilariu, F. Locment, G. Friedrich: "A Simple Experimental Prediction Model of Photovoltaic Power for DC Microgrid", ISIE 2012 (IEEE International Symposium on Industrial Electronics), Hangzhou, Zhejiang (Chine), 28-31 May 2012, pp. 963-968. DOI: [10.1109/ISIE.2012.6237160](https://doi.org/10.1109/ISIE.2012.6237160)