Ghassane Aniba

Eng., Ph.D., IEEE Senior Member

Full Professor
Department of Electrical Engineering
Mohammadia School of Engineers (EMI)
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IEEE Memberships and Services

Since 2020	IEEE Morocco Power and Energy (PES) Chapter Chair
	IEEE Morocco Section - Membership Development Officer
	IEEE EMI Student Branch Counselor
Since 2018	Member of IEEE Power and Energy Society (PES)
Since 2011	Member of IEEE Communication Society (ComSoc)
Since 2003	IEEE Member (Senior Member since 2017)

Professional Experience

2023/07/1-2023/12/31 — **Fulbright Visiting Scholar, Massachusetts Institute of Technology (MIT), USA**
Fulbright Visiting Scholar Program 2023
Activity: Development of Interactive and Animated Engineering Educational Content for Efficient In-class and At-home Learning using Wolfram Technologies.

2021 – 2022 — **Director, Technological Center of Innovation (CIT)**
Mohammadia School of Engineers, Rabat, Morocco

2021/01 – · · · · — **Full Professor, Department of Electrical Engineering**
Mohammadia School of Engineers, Rabat, Morocco
Research Interests: Smart Grids, Artificial Intelligence, Wireless Communications, Cooperative Networks, Sensor Networks.

2015/08/31-2015/10/05 — **Academic Staff position at the Electrical, Electronis and Information engineering "Gugliemo Marconi", University of Bologna, Italy**
European Union - Erasmus Mundus Action 2 : EU-METALIC II
Activity: Long-term collaboration establishment with Bologna University.

2014/12 – 2020/12 — **Associate Professor, Department of Electrical Engineering**
Mohammadia School of Engineers, Rabat, Morocco
Research Interests: Smart Grids, Smart Transportation, Wireless Communications, Cooperative Networks, Sensor Networks.

2010/12 – 2014/12 — **Assistant Professor, Department of Electrical Engineering**
Mohammadia School of Engineers, Rabat, Morocco
Research Interests : Wireless Communications, MIMO and Cooperative Networks, Sensor Networks, Cognitive Networks, Green Networks.

Professional Experience (continued)

2010/04 – 2010/11
Postdoctoral Scholar
King Abdullah University of Science and Technology (KAUST), Jeddah, Saudi Arabia
Supervisor: Prof. Sonia Aïssa
Research Subject: Design and Analysis of Cooperative Spectrum Sensing Algorithms in Cognitive Networks.

2010/01 – 2010/03
Postdoctoral Scholar
University of Ottawa, Ottawa, Canada
Supervisor: Prof. Azzedine Boukerche
Research Subject: Design and Analysis of a MAC Protocol for Vehicular Ad-hoc Networks.

2009/04 – 2009/12
Postdoctoral Scholar
Laval University, Quebec, Canada
Supervisor: Prof. Sébastien Roy
Research Subject: Conception and Analysis of Sensor Networks using MIMO Antenna Configurations.

2003 – 2008
Research Assistant
National Institute of Scientific Research - Energy, Materials and Telecommunications (INRS-EMT), Quebec, Canada
Supervisor: Prof. Sonia Aïssa
Research Subject: Cross-Layer Conception of Scheduling and Resources Allocation Algorithms for Wireless Networks with MIMO Antenna Configurations.

2002/02 – 2002/06
Engineering Training
National Institute for Research in Digital Science and Technology (INRIA), Sophia-Antipolis, France
Supervisor: Prof. Walid Dabbous
Research Subject: Conception of a New Routing Protocol for Multicast Applications over Satellite and DVB-RCS Terminals.

2001/07
Technical Training
Telecom & Management SudParis (ex. INT), Evry, France
Supervisor: Prof. Daniel Ranc
Research Subject: Implementation of ORBacus (Corba Bus) in a Linux Platform.

2001/04 – 2002/01
Engineering Training
National Institute of Posts and Telecommunicaions (INPT), Rabat, Morocco
Supervisor: Prof. M. A. Charif Chefchaouni (INPT Director)
Research Subject: Remote Tracking of Mobile Vehicules using SMS on GSM Networks.

2000/07
Student Training
Maroc Telecom (IAM), Line Construction Center (CCL), Casablanca, Morocco
Supervisor: Mr. Mohammed Charii
Tasks: Providing Assistance and Taking Part in Phone Lines' Repairs on Construction Sites.

Education

2014/07/18 — **Mohammadia School of Engineers (EMI), Rabat, Morocco**
Habilitation
Research subject: Cooperative protocols in wireless networks for the management of Smart Grids.

2003 – 2009 — **National Institute of Scientific Research (INRS-EMT), Montreal, Canada**
PhD in Telecommunications with Honors
Thesis: Cross-Layer Design and Analysis for MIMO Wireless Networks.
GPA: 4.3/4.3.

2002 – 2003 — **National Institute of Scientific Research (INRS-EMT), Montreal, Canada**
Master Research in Telecommuincations (Exempted, Direct PhD)
Main courses: Digital communications, Digital Signal Processing, Stochastic processes, Radio-Frequency Techniques, Telecommunication Networks Planification, Radio Mobile Communications.
GPA: 4.3/4.3.

1999 – 2002 — **National Institute of Posts and Telecommunications (INPT), Rabat, Morocco**
Chartered Engineer in Telecommunications with Honors
Main courses: Digital communications, Wireless communications, Image processing, Stochastic and probability, Economy.

1997 – 1999 — **Mohamed V High School, Casablanca, Morocco**
Preparatory Classes in Mathematics and Physics (MP)
Main courses: Mathematics, Physics.
National Rank: within first 5%.

Certificates

2020/08/17 — **Huawei Certification**
HCIA 5G Certification (No. 010103866080804677593786)
Training : Huawei HCIA-5G Course.

2011/07/4–8 — **Digium, The asterisk Company, Kuala Lumpur, Malaysia**
Digium Certified Asterisk Professional (dCAP No. 2090)
Training : Asterisk Advanced Course.

Continuous Training

2023/06/23 – 2023/07/11 — **Wolfram Educational Innovation Track**
2023 Wolfram Summer program
Bentley University, Waltham, Massachusetts, USA.

2019/09/16 – 20 — **Smart Grid and Teaching Methods**
AT-SGIRES : Advanced Teaching and training on Smart grid and Grid Integration of Renewable Energy Systems
Hamburg University of Technology (THHU), Germany.

2019/09/02 – 13 — **Smart Grids: Technical Capacity Building Course**
AT-SGIRES : Advanced Teaching and training on Smart grid and Grid Integration of Renewable Energy Systems
Newcastle University, UK.

2019/02/4 – 15 — **Smart Grids : Working Principles, Design and Automation**
AT-SGIRES : Advanced Teaching and training on Smart grid and Grid Integration of Renewable Energy Systems
University of Cyprus, Cyprus.

Continuous Training (continued)

2017/06/18 – 2017/07/07 — **Wolfram Educational Innovation Track**
2017 Wolfram Summer program
Bentley University, Waltham, Massachusetts, USA.

2013/09/8-12 — **Management of Research Projects on Solar Energy,**
GIZ-MASEN Training
Ecole Mohammadia d'Ingénieurs (EMI), Rabat, Morocco.

2012/03/5–16 — **Parenis Research Exploitation Office Seminar**
Hamburg University of Technology (TUHH)
Hamburg, Germany.

2011/04/25-29 — **Institut de la Francophonie pour l'administration et la gestion (IFAG)**
Subject : Professional Development in Academic Teaching
Marrakech, Morocco

Research Projects

2021/10 – 2024/09 — **National Center for Scientific and Technical Research (CNRST) and Agency of Digital Development (ADD) - AL Khawarizmi**

- Project: "**ASCENSION: AI Scheme for Capturing Employment's Newsworthy Streams, Insights, Outlooks & Needs**"
- Role: Project Coordinator
- Scientific partners: Institut Agronomique et Vétérinaire Hassan II (IAV)
- Industrial Partners: Moroccan Agency for Sustainable Energy (MASEN), Association des Ingénieurs de l'Ecole Mohammadia, Agence nationale de promotion de l'emploi et des compétences (ANAPEC), Enactus Morocco

2021/01 – 2024/01 — **Korea International Cooperation Agency (KOICA)**

- Project: "**SMMMART - Smart Multi-Microgrids for Morocco and Africa Rural Territories**"
- Scientific partners: KOICA, INESC TEC
- Industrial Partners: MASEN, Solar Cluster

2019/09 – 2022/08 — **Institute for Research in Solar Energy and New Energies (IRESEN) - Green INNO-PROJECT**

- Project: "**Intelligent Inspection of Photovoltaic Parks Using Aerial Images of Drones**"
- Role: EMI Project Coordinator
- Scientific partners: Institut Agronomique et Vétérinaire Hassan II (IAV)
- Industrial Partners: ETAFAT

2018/01 – 2021/06 — **Erasmus+ Programme of the European Union: Capacity Building in Higher Education**

- Project: "**AT-SGIRES - Advanced Teaching and Training on Smart Grid and Grid Integration of Renewable Energy Systems**"
- Role: EMI Project Coordinator
- Scientific partners: University of NewCastle, German Jordanian University, University of Cyprus, Technische Universitatet Hamburg-Harburg, Damascus University, Al Baath University, Tafila Technical University, Middle East University, University Al Akhawayn

2016/05 – 2017/05 — **International Research Projects CNR-CNRST (Morocco-Italy)**

- Project: "**Cooperative Transmission Techniques for Smart Cities Data Sensing Collection**"
- Role: Moroccan Primary Project Coordinator
- Scientific partners: University of Bologna

Research Projects (continued)

2014/09 – 2018/08

- **Institute for Research in Solar Energy and New Energies (IRESEN) - Research Projects**
  - Project: "**MicroCSPs Contribution on the Management of an Electrical Grid including Renewable Energy Sources**"
  - Role: Primary Project Coordinator
  - Scientific partners: Michigan Technological University (MTU), IRESEN
  - Industrial Partners: ONEE

Awards and Distinctions

- Fulbright Visiting Scholar Program 2023 Fellowship for six months at Massachusetts Institute of Technology (MIT), USA.
- Elevated to the grade of IEEE Senior Member, 2017.
- Postdoctoral fellowship from *Fonds Québécois de la Recherche sur la Nature et les Technologies* (FQRNT), 2009–2011.
- Industrial Research and Development Fellowship (IRDF) from *Natural Sciences and Engineering Research Council of Canada* (NSERC), 2008–2011.
- Visiting Fellowship in Canadian Government Laboratories (VF) from NSERC, 2008 (Declined).
- Student Travel Grant from *IEEE ComSoc* to attend the *IEEE International Conference on Communications* (ICC), 2006.
- Scholarship from INRS-EMT, Master and PhD programs, 2002–2007.
- Scholarship that exempts foreign students from differential fees (Canada) - Master and PhD programs, 2002–2003.
- Third Prize for Graduate Telecommunication Engineers in Radio Mobile Communications, INPT, Morocco, 2002.
- International Training Grant at *The French National Institute for Research in Computer Science and Control* (INRIA), Sophia-Antipolis, France, 2002/02–2002/06.
- International Training Grant from The French National Institute *Telecom & Management SudParis* (ex. INT d'Evry), France, 2001/07–2001/08.
- International Scholarship at *French National School of Electricity and Mechanics* (ENSEM), France, 1999–2002 (Declined).

Taught Courses

- Signals & Systems, and Signal Processing
- Information Theory and Coding
- Analog and Digital Modulation
- Guided Wave Propagation
- Wolfram Mathematica
- MIMO and Advanced Multiple Access Techniques
- Voice Over IP: Asterisk
- Wireless Local Area Network (WLAN)
- Transmission Lines
- Communications Systems
- Radio Communication Technologies
- Free Space Wave Propagation
- Matlab
- Antennas
- Semiconductors and Basic Electronics
- Citation Management and LaTeX Editing

Research Publications

Journal Articles

1. H. Oufettoul, N. Lamdihine, S. Motahhir, I. A. Abdelmoula, N. Lamrini, H. Karmouni, and **G. Aniba**, "Accurate and fast MPPT procedure for metaheuristic algorithm under partial shading effect", *Performance Enhancement and Control of Photovoltaic Systems*, pp. 297–340, 2024. DOI: 10.1016/B978-0-443-13392-3.00016-5.

2. H. Oufettoul, N. Lamdihine, S. Motahhir, N. Lamrini, I. Ait Abdelmoula, and **G. Aniba**, "Comparative performance analysis of PV module positions in a solar PV array under partial shading conditions", *IEEE Access*, vol. 11, pp. 12 176–12 194, 2023. DOI: 10.1109/ACCESS.2023.3237250.

3. H. Oufettoul, S. Motahhir, I. Ait Abdelmoula, and **G. Aniba**, "Optimized topology for a photovoltaic array using switches control", *Energy Conversion and Management*, vol. 291, p. 117 315, 2023. DOI: 10.1016/j.enconman.2023.117315.

4. Y. Zefri, I. Sebari, H. Hajji, **G. Aniba**, and M. Aghaei, "A layer-2 solution for inspecting large-scale photovoltaic arrays through aerial LWIR multiview photogrammetry and deep learning: A hybrid data-centric and model-centric approach", *Expert Systems with Applications*, vol. 223, p. 119 950, 2023. DOI: 10.1016/j.eswa.2023.119950.

5. H. Oufettoul, S. Motahhir, **G. Aniba**, M. Masud, and M. AlZain, "Improved TCT topology for shaded photovoltaic arrays", *Energy Reports*, vol. 8, pp. 5943–5956, 2022. DOI: 10.1016/j.egyr.2022.04.042.

6. H. Oufettoul, S. Motahhir, **G. Aniba**, M. Masud, and M. AlZain, "Improved TCT topology for shaded photovoltaic arrays", *Energy Reports*, vol. 8, pp. 5943–5956, 2022. DOI: 10.1016/j.egyr.2022.04.042.

7. I. Souffer, M. Sghiouar, I. Sebari, Y. Zefri, H. Hajji, and **G. Aniba**, "Automatic extraction of photovoltaic panels from UAV imagery with object-based image analysis and machine learning", *Lecture Notes in Electrical Engineering*, vol. 745, pp. 699–709, 2022. DOI: 10.1007/978-981-33-6893-4_64.

8. Z. Yahya, S. Imane, H. Hicham, A. Ghassane, and E. B.-I. Safia, "Applied imagery pattern recognition for photovoltaic modules' inspection: A review on methods, challenges and future development", *Sustainable Energy Technologies and Assessments*, vol. 52, p. 102 071, 2022. DOI: 10.1016/j.seta.2022.102071.

9. Y. Zefri, I. Sebari, H. Hajji, and **G. Aniba**, "Developing a deep learning-based layer-3 solution for thermal infrared large-scale photovoltaic module inspection from orthorectified big UAV imagery data", *International Journal of Applied Earth Observation and Geoinformation*, vol. 106, 2022. DOI: 10.1016/j.jag.2021.102652.

10. ——, "In-depth investigation of applied digital photogrammetry to imagery-based RGB and thermal infrared aerial inspection of large-scale photovoltaic installations", *Remote Sensing Applications: Society and Environment*, vol. 23, 2021. DOI: 10.1016/j.rsase.2021.100576.

11. M. Toub, M. Bijaieh, W. Weaver, I. Robinett R.D., M. Maaroufi, and **G. Aniba**, "Droop control in DQ_ coordinates for fixed frequency inverter-based AC microgrids", *Electronics (Switzerland)*, vol. 8, no. 10, 2019. DOI: 10.3390/electronics8101168.

12. M. Toub, C. Reddy, M. Razmara, M. Shahbakhti, I. Robinett R.D., and **G. Aniba**, "Model-based predictive control for optimal MicroCSP operation integrated with building HVAC systems", *Energy Conversion and Management*, vol. 199, 2019. DOI: 10.1016/j.enconman.2019.111924.

[13] H. Bilil, **G. Aniba**, and H. Gharavi, "Dynamic appliances scheduling in collaborative MicroGrids system", *IEEE Transactions on Power Systems*, vol. 32, no. 3, pp. 2276–2287, 2017. DOI: 10.1109/TPWRS.2016.2613479.

[14] S. Belmoubarik, **G. Aniba**, B. Elgraini, and M. Maaroufi, "Information security enhancement in smart grids using secrecy capacity of a wireless channel", *International Journal of Applied Engineering Research*, vol. 10, no. 24, pp. 44 132–44 139, 2015.

[15] ——, "Secure Nakagami-m fading broadcast channel for smart grids", *International Journal of Applied Engineering Research*, vol. 10, no. 24, pp. 45 605–45 610, 2015.

[16] H. Bilil, **G. Aniba**, and M. Maaroufi, "Probabilistic economic/environmental power dispatch of power system integrating renewable energy sources", *Sustainable Energy Technologies and Assessments*, vol. 8, pp. 181–190, 2014. DOI: 10.1016/j.seta.2014.09.002.

[17] D. Hamza, S. Aissa, and **G. Aniba**, "Equal gain combining for cooperative spectrum sensing in cognitive radio networks", *IEEE Transactions on Wireless Communications*, vol. 13, no. 8, pp. 4334–4345, 2014. DOI: 10.1109/TWC.2014.2317788.

[18] S. Belmoubarik, H. Bilil, **G. Aniba**, M. Maaroufi, and B. Elgraini, "Dynamic assignment of renewable energy tokens in a collaborative microgrids", *International Conference on Next Generation Networks and Services, NGNS*, pp. 189–192, 2012. DOI: 10.1109/NGNS.2012.6656092.

[19] **G. Aniba** and S. Aissa, "Cross-layer designed adaptive modulation algorithm with packet combining and truncated ARQ over MIMO Nakagami fading channels", *IEEE Transactions on Wireless Communications*, vol. 10, no. 4, pp. 1026–1031, 2011. DOI: 10.1109/TWC.2011.030311.100487.

[20] **G. Aniba** and S. Aïssa, "BER evaluation for general QAM in Nakagami-m fading channels", *Electronics Letters*, vol. 45, no. 6, pp. 319–321, 2009. DOI: 10.1049/el.2009.3656.

[21] S. Aïssa and **G. Aniba**, "BER analysis of M-QAM with packet combining over space-time block coded MIMO fading channels", *IEEE Transactions on Wireless Communications*, vol. 7, no. 3, pp. 799–805, 2008. DOI: 10.1109/TWC.2008.060745.

[22] ——, "Queuing models for dimensioning interactive and streaming services in high-speed downlink packet access networks", *IEEE Transactions on Broadcasting*, vol. 53, no. 3, pp. 619–626, 2007. DOI: 10.1109/TBC.2007.903611.

[23] **G. Aniba** and S. Aïssa, "Adaptive scheduling for MIMO wireless networks: Cross-layer approach and application to HSDPA", *IEEE Transactions on Wireless Communications*, vol. 6, no. 1, pp. 259–268, 2007. DOI: 10.1109/TWC.2007.05162.

[24] ——, "A general traffic and queueing delay model for 3G wireless packet networks", *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, vol. 3124, pp. 942–949, 2004. DOI: 10.1007/978-3-540-27824-5_123.

[25] F. Filali, **G. Aniba**, and W. Dabbous, "Efficient support of IP multicast in the next generation of GEO satellites", *IEEE Journal on Selected Areas in Communications*, vol. 22, no. 2, pp. 413–425, 2004. DOI: 10.1109/JSAC.2003.819994.

Conference Proceedings

1. Y. Lamkharbach, M. Mossadak, A. Chebak, and **G. Aniba**, "Sliding mode control of a single-phase grid-connected vsi with lcl filter : Single sensor approach for controlling current injection into the grid", in *2024 IEEE 18th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG)*, 2024, pp. 1–8. DOI: 10.1109/CPE-POWERENG60842.2024.10604321.

2. A. Ait-Omar, Z. Benhmidouch, I. Ou Ali, **G. Aniba**, S. Moufid, C. Chatri, H. Laabassi, and H. Bouzekri, "Optimal sizing of grid-tied microgrids: A sensitivity analysis", in *2023 IEEE PES/IAS PowerAfrica*, IEEE, 2023, pp. 1–5. DOI: 10.1109/PowerAfrica57932.2023.10363294.

3. H. Oufettoul, S. Motahhir, I. Ait Abdelmoula, **G. Aniba**, W. Issa, and O. Mahir, "Optimum MPPT technique for reconfiguring the photovoltaic array under partial shading failure", in *2023 12th International Conference on Renewable Energy Research and Applications (ICRERA)*, IEEE, 2023, pp. 331–338. DOI: 10.1109/ICRERA59003.2023.10269423.

4. Y. Zefri, M. Aghaei, H. Hajji, **G. Aniba**, and I. Sebari, "Advanced classification of failure-related patterns on solar photovoltaic farms through multiview photogrammetry thermal infrared sensing by drones and deep learning", in *2023 International Conference on Future Energy Solutions (FES)*, IEEE, 2023, pp. 1–6. DOI: 10.1109/FES57669.2023.10182940.

5. H. Elidrissi, H. Achakir, Y. Zefri, I. Sebari, **G. Aniba**, and H. Hajji, "Automatic on field detection and localization of defective solar photovoltaic modules from orthorectified RGB UAV imagery", in *2022 6th International Conference on Green Energy and Applications (ICGEA)*, IEEE, 2022, pp. 46–50. DOI: 10.1109/ICGEA54406.2022.9791946.

6. H. Oufettoul, S. Motahhir, **G. Aniba**, and I. Ait Abdelmoula, "Comprehensive analysis of MPPT control approaches under partial shading condition", in *2022 11th International Conference on Renewable Energy Research and Application (ICRERA)*, IEEE, 2022, pp. 352–359. DOI: 10.1109/ICRERA55966.2022.9935687.

7. ——, "Sensor placement strategy for locating photovoltaic array failures", in *2022 11th International Conference on Renewable Energy Research and Application (ICRERA)*, IEEE, 2022, pp. 360–368. DOI: 10.1109/ICRERA55966.2022.9935686.

8. Y. Zefri, I. Sebari, H. Hajji, and **G. Aniba**, "An encoder-decoder u-net based model for overheated photovoltaic modules extraction from orthorectified remotely sensed thermal infrared UAV imagery", in *2022 IEEE Mediterranean and Middle-East Geoscience and Remote Sensing Symposium (M2GARSS)*, IEEE, 2022, pp. 25–28. DOI: 10.1109/M2GARSS52314.2022.9840254.

9. M. Bah, Z. Boudi, M. Toub, A. Wakrime, and **G. Aniba**, "Formalizing ontologies for AI models validation: From OWL to event-B", ser. Proceedings - 2021 IEEE 15th International Conference on Semantic Computing, ICSC 2021, 2021, pp. 455–462. DOI: 10.1109/ICSC50631.2021.00080.

10. N. Lamdihine, M. Ouassaid, and **G. Aniba**, "Gradual faults diagnosis by a novel impedance characterization method", ser. 2021 12th International Renewable Engineering Conference, IREC 2021, 2021. DOI: 10.1109/IREC51415.2021.9427860.

11. K. Meziati Sabour, M. Toub, and **G. Aniba**, "Renewable electricity real-time pricing: Enhancing grid's stability through demand side management", ser. 2021 IEEE PES Innovative Smart Grid Technologies - Asia, ISGT Asia 2021, 2021. DOI: 10.1109/ISGTASIA49270.2021.9715676.

[12] H. Oufettoul, **G. Aniba**, and S. Motahhir, "MPPT techniques investigation in photovoltaic system", ser. Proceedings of 2021 9th International Renewable and Sustainable Energy Conference, IRSEC 2021, 2021. DOI: 10.1109/IRSEC53969.2021.9741122.

[13] M. Toub, I. Robinett R.D., M. Maaroufi, and **G. Aniba**, "Decentralized Hamiltonian control of multi-DEr isolated microgrids with meshed topology", ser. Energy Procedia, vol. 157, 2019, pp. 1253–1265. DOI: 10.1016/j.egypro.2018.11.291.

[14] M. Toub, M. Shahbakhti, R. Robinett, and **G. Aniba**, "Model predictive control of micro-CSP integrated into a building hvac system for load following demand response programs", ser. ASME 2019 Dynamic Systems and Control Conference, DSCC 2019, vol. 2, 2019. DOI: 10.1115/DSCC2019-9106.

[15] ——, "MPC-trained ANFIS for control of microcsp integrated into a building HVAC system", ser. Proceedings of the American Control Conference, vol. 2019-July, 2019, pp. 241–246. DOI: 10.23919/acc.2019.8814736.

[16] I. Zahiri and **G. Aniba**, "The effect of pre-coding error on cooperative wireless transmission in smart neighbor area network", ser. Energy Procedia, vol. 157, 2019, pp. 1110–1117. DOI: 10.1016/j.egypro.2018.11.278.

[17] ——, "The impact of transmission error on the performance of cooperative wireless transmission on smart metering environment", ser. Energy Procedia, vol. 157, 2019, pp. 1101–1109. DOI: 10.1016/j.egypro.2018.11.277.

[18] N. Lamdihine, M. Ouassaid, and **G. Aniba**, "A dual PV panel defects diagnosis using the photovoltaic plant reflectometry profile", ser. 3rd Renewable Energies, Power Systems and Green Inclusive Economy, REPS and GIE 2018, 2018. DOI: 10.1109/REPSGIE.2018.8488851.

[19] ——, "A novel gradual faults diagnosis using the photovoltaic plant reflectometry profile", ser. Proceedings - 2018 IEEE PES Innovative Smart Grid Technologies Conference Europe, ISGT-Europe 2018, 2018. DOI: 10.1109/ISGTEurope.2018.8571491.

[20] C. Reddy, M. Toub, M. Razmara, M. Shahbakhti, I. Robinett R.D., and **G. Aniba**, "Modeling and optimal control of micro-CSP and a building HVAC system to minimize electricity cost", ser. ASME 2018 Dynamic Systems and Control Conference, DSCC 2018, vol. 2, 2018. DOI: 10.1115/DSCC2018-9131.

[21] M. Toub, C. Reddy, M. Razmara, M. Shahbakhti, R. Robinett, and **G. Aniba**, "Model predictive control for MicroCSP integration into a building HVAC system", ser. IEEE International Conference on Control and Automation, ICCA, vol. 2018-June, 2018, pp. 890–895. DOI: 10.1109/ICCA.2018.8444186.

[22] M. Toub, W. Weaver, I. Robinett R.D., M. Maaroufi, and **G. Aniba**, "A DQ droop control strategy for fixed frequency VSI-based AC microgrids", ser. 5th International Conference on Renewable Energy: Generation and Application, ICREGA 2018, vol. 2018-January, 2018, pp. 332–335. DOI: 10.1109/ICREGA.2018.8337641.

[23] I. Zahiri and **G. Aniba**, "Cooperative wireless transmission for smart neighbor area networks", ser. 3rd Renewable Energies, Power Systems and Green Inclusive Economy, REPS and GIE 2018, 2018. DOI: 10.1109/REPSGIE.2018.8488867.

[24] I. Biyya, **G. Aniba**, and M. Maaroufi, "Impact of load and renewable energy uncertainties on single and multiple energy storage systems sizing", ser. 2017 IEEE Power and Energy Society Innovative Smart Grid Technologies Conference, ISGT 2017, 2017. DOI: 10.1109/ISGT.2017.8086031.

[25] ——, "Probabilistic storage modeling and suboptimal sizing of renewable energy microgrids", ser. 2017 IEEE PES Innovative Smart Grid Technologies Conference Europe, ISGT-Europe 2017 - Proceedings, vol. 2018-January, 2017, pp. 1–6. DOI: 10.1109/ISGTEurope.2017.8260297.

[26] ——, "Standardization of distributed energy storage systems sizing in a probabilistic context", ser. 17th IEEE International Conference on Smart Technologies, EUROCON 2017 - Conference Proceedings, 2017, pp. 705–710. DOI: 10.1109/EUROCON.2017.8011202.

[27] A. Chachdi, B. Rahmouni, and **G. Aniba**, "Socio-economic analysis of electric vehicles in morocco", ser. Energy Procedia, vol. 141, 2017, pp. 644–653. DOI: 10.1016/j.egypro.2017.11.087.

[28] M. Charar, Z. Guennoun, and **G. Aniba**, "Assessment of a closed-form iterative water filling energy efficient power control algorithm in multi-carrier context", ser. Proceedings - 2017 International Conference on Wireless Networks and Mobile Communications, WINCOM 2017, 2017. DOI: 10.1109/WINCOM.2017.8238195.

[29] N. Bounouader, S. Ghacham, **G. Aniba**, and Z. Guennoun, "Exploiting zero forcing beamforming and TV white space band for multiuser MIMO cognitive cooperative radio networks", ser. International Conference on Wireless Networks and Mobile Communications, WINCOM 2015, 2016. DOI: 10.1109/WINCOM.2015.7381311.

[30] S. Khoussi, H. Bilil, and **G. Aniba**, "Optimal time of use of renewable electricity pricing: Three-player games model", ser. 2015 IEEE International Conference on Smart Grid Communications, SmartGridComm 2015, 2016, pp. 199–204. DOI: 10.1109/SmartGridComm.2015.7436300.

[31] M. Toub, **G. Aniba**, M. Maaroufi, and I. Robinett R.D., "Decentralized Hamiltonian control of isolated AC microgrids: Theory & design", ser. Proceedings of the 2015 IEEE Innovative Smart Grid Technologies - Asia, ISGT ASIA 2015, 2016. DOI: 10.1109/ISGT-Asia.2015.7387194.

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Professional Activities

- **Services**
  - TPC Co-Chair of the *3rd IEEE Middle East & North Africa COMMunications Conference (MENACOMM 2020)*, Agadir, Morocco.
  - Co-chair of the Special session "Smart Metering and Smart Homes" at the *3rd IEEE Renewable Energies, Power Systems and Green Inclusive Economy (REPS & GIE)*, 2018.
  - Chairman of the "Smart and Green Systems and Networks" track at the 19th IEEE Mediterranean Electrotechnical Conference (MELECON), 2018.
  - Chairman of the "Cooperative Techniques and Relaying" session in the *IEEE 20th International Conference on Telecommunications (ICT)*, 2013.
  - Technical Program Committee member of The International Conference on Computer Systems and Industrial Informatics (ICCSII), 2012.
  - Technical Program Committee member of The International Conference on Communications (ICC), 2011.
  - Technical Program Committee member of The International Wireless Communications and Mobile Computing Conference (IWCMC), 2010.
  - President of Students' Association at INRS-Télécom, 2003–2004.
  - Member of the Administration Committee of the INRS Student's Federation (FE-INRS), 2003–2004.

- **Reviewer for International Journals**
  - IEEE Transactions on Wireless Communications (10 articles)
  - IEEE Transactions on Communications (2 articles)
  - IEEE Transactions on Signal Processing (1 article)
  - IEEE Transactions on Vehicular Technology (1 article)
  - IEEE Journal on Selected Areas in Communications (1 article)
  - IEEE Communications Magazine (3 articles)
  - IEEE Wireless Communications Magazine (2 articles)
  - IEEE Communications Letters (2 article)

- **Reviewer for International Conferences**
  - IEEE International Conference on Communications (ICC) (28 papers)
  - IEEE Global Telecommunications Conference (GlobeCom) (11 papers)
  - IEEE Wireless Communications and Networking Conference (WCNC) (7 papers)
  - IEEE Vehicular Technology Conference (VTC) (6 papers)
  - IEEE International Symposium on Spread Spectrum Techniques and Applications (ISSSTA) (1 paper)
  - IEEE Symposium on Computers and Communications (ISCC) (1 paper)
  - Hawaii International Conference on System Sciences (HICSS) (1 paper)
  - International Conference on Communications and Networking in China (ChinaCom) (1 paper)

Community Services

- Judge of Humanitarian Technology Project Design Competition (HTPDC) 2021 Organized by IEEE Power and Energy Society (PES)- Humanitarian Activities Committee (HAC) on IEEE PES Day 2021.
- Faculty Advisor of the Enactus EMI Team, Winner of the Enactus Morocco 2014 Competition and Vice-Champion of the *Enacts WorldCup 2014* in Beijing, China.
- Faculty Advisor the Enactus EMI Team, Winner of the Enactus Morocco 2013 Competition and semi-finalist of the *Enactus Worldcup 2013* in Cancun, Mexico.

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