

Ali El Moussati



PERSONAL INFORMATION

<i>Family status</i>	<i>Married, two children</i>
<i>Date and place of birth</i>	<i>January 2, 1975 in Nador (Morocco)</i>
<i>Profession</i>	<i>Full Professor at National school of applied sciences of Oujda University Mohammed I</i>
<i>Address</i>	<i>École Nationale des Sciences Appliquées d'Oujda (ENSAO) B.P. 669, Hay EL QODS, Complexe Universitaire 60000- Oujda</i>
<i>Department</i>	<i>Electronics, Informatics and Telecommunications</i>
<i>Researcher Laboratory</i>	<i>Renewable Energy, Embedded Systems and Information Processing</i>
<i>email</i>	a.elmoussati@ump.ac.ma
<i>ORCID ID</i>	http://orcid.org/0000-0002-3182-1907

SKILLS & EXPERTISE

*Electronics and Communications Engineering, Numerical Physical Modelling,
Intelligent Internet of Things Solutions for Health, Environment and Agriculture*

OBTAINED DIPLOMAS

2004: PhD in Electronics, University of Sciences and Technologies of Lille(USTL) France.

Specialty: Microwave and Micro technology.

Topic: New algorithms for macroscopic electrical and electromagnetic physical modeling of microwave circuits in solid state.

2003: Advanced Master in Computer Systems & Microelectronics at Institut Supérieur de Micro-électronique Appliquée. ESIM group Marseille. France

1999: Master of Science in Electronics at University of Lille 1, France

1998: Bachelor of Science in Telecommunications at University of Lille 1, France

1995: Under graduate studies in Mathematics at University of Lille 1, France

PROFESSIONAL STATUS

December 2016↔ Present: Full Professor at ENSAO, University Mohammed I, Morocco

June 2010: Associate Professor at ENSAO, University Mohammed I, Morocco

September 2005: Assistant Professor at ENSAO, University Mohammed I, Morocco

2000-2002: Teaching Assistant at University Institute of Technology of Lille and higher Institute of Electronics North, France.

PUBLICATIONS

International journals

- [20] Ali El Moussati et al. «**Enhanced 4×4 MIMO RoF architecture for 5G mmWave indoor applications at 60 GHz unlicensed band**» *Optics Communications*, 2023, 533, pp 12926.
- [19] Ali El Moussati et al. «**Security Risk Assessment for Internet Of Things based Forest Fires Detection System**» *International Journal of Advanced Trends in Computer Science and Engineering*, 2020 Vol. 9, No.5, pp. 9098-9104
- [18] Ali El Moussati et al. «**Design of A Low-Cost Smart Irrigation System using LoRa wireless RF technology**» *African and Mediterranean Agricultural Journal Al Awamia*, 2021, 132 pp. 105-125.
- [17] Ali El Moussati et al. «**Early forest fire detection system using wireless sensor network and deep learning**» *International Journal of Advanced Computer Science and Applications*, 2020, 11(5), pp. 496–503
- [16] Ali El Moussati et al. «**New millimeter wave generation scheme for MIMO-OFDM based Radio-over-Fiber system**» *Optics Communications*, 2019, 442, pp. 101–105
- [15] Ali El Moussati et al. «**Numerical modelling of vibration characteristics of a partially metallized micro electromechanical system resonator DISC**» *Acta Acustica united with Acustica*, 2019, 105(6), pp. 1164–1172
- [14] Ali El Moussati et al. «**Investigation of radio channel model in indoor environment at 60 GHz**» *International Journal of Modelling Identification and Control* Volume 29 Number 4: page 359. January 2018
- [13] Ali El Moussati et al. «**Performance Evaluation of 60-GHz-WPAN System Distributed Over Multi-Mode Fiber**» *International Journal of Electronics and Telecommunications*, Volume 63, Number 4, pages 381-387. October 2017
- [12] Ali El Moussati et al. «**On the capacity of MIMO-OFDM based diversity and spatial multiplexing in Radio-over-Fiber system**» *Optics Communications*, Volume 402, pages 252-259. November 2017
- [11] Ali El Moussati et al. «**Improving ROCs of Constant False Alarm Coded Anti-collision Radar in very noised cases**» *International Journal of Electronics and Telecommunications*, Volume 63, Number 2, pages 127-135. April 2017
- [10] Ali El Moussati et al. «**IEEE 802.15.3C Transmission over Multimode Fiber Links: Performance Comparison of RF and IF over Fiber Architectures**» *International Journal of Microwave and Optical Technology* Volume 11, Number 5, pages: 384-390. September 2016.
- [9] Ali El Moussati et al. «**Performance evaluation of coherent optical OFDM communications using LDPC codes**» *International Journal of Microwave and Optical Technology* Volume 11, Number 1, pages:80-86. January 2016.
- [8] Ali El Moussati et al. «**ROC Performances of Constant False Alarm Coded Anti-collision Radar in Multi-user Environment**» *International Journal of Wireless Information Networks*, Volume 22, pp 369-385, December 2015.
- [7] Ali El Moussati et al. «**Multiband filter at adjustable free spectral range by convolution of transfer functions according to the Vernier effect**» *IET Optoelectronics* · September 2015
- [6] Ali El Moussati et al. «**Spectral management for a Cognitive Radio application with Adaptive Modulation and Coding**» *International Journal of Microwave and Optical Technology* Volume 9, Num 6, pp.445-452. November 2014.
- [5] Ali El Moussati et al. «**Performance Evaluation of Radio over Fiber System Model in Multipath Fading Channel at 60 GHz**» *International Journal of Microwave and Optical Technology*» Volume 9, Num 6, November 2014.
- [4] Ali El Moussati et al. «**16-QAM Modulation Based on Quad-Parallel Mach-Zehnder Modulator Dedicated for Radio over-Fiber System**» *International Journal of Information and Electronics Engineering*, Vol. 3, No. 5, September 2013.
- [3] Ali El Moussati et al. «**MMICs time-domain electrical physical simulator adapted to the parallel computation**» *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields*, Volume 22, Issue3, Mai/ June 2009.
- [2] Ali El Moussati et al. «**2D time-domain electromagnetic macroscopic numerical modelling on parallel computer: application to the mm-wave silicon DIMPATT diode**» *Journal of Computational Electronics*, Volume 7, Number 1, pages 34-42, Mars 2008.
- [1] Ali El Moussati et al. «**High order explicit versus quasi-linear implicit finite-difference approximation for semiconductor device time-domain macroscopic modelling on parallel computer**» *Journal of Computational Electronics*, Volume 5, Numbers 2-3, pages 235-240, July 2006.

International conferences

▪ Oral presentation

- [33] Ali El Moussati et al. «**New Topology of WSN for Smart Irrigation with Low Consumption and Long Range**» *International Conference on Digital Technologies and Applications, January 28th 2022, Fès, Morocco.*
- [32] Ali El Moussati et al. «**Portable Device for Real-Time Monitoring of Blood Samples**» *International Conference on Electronic Engineering and Renewable Energy Systems, May 20th 2022 Saïdia, Morocco.*
- [31] Ali El Moussati et al. «**Telemedicine in the Era of Covid-19: Teleconsultation Architecture Platform**» *International Conference on Electronic Engineering and Renewable Energy Systems, May 20th 2022 Saïdia, Morocco.*
- [30] Ali El Moussati et al. «**60 GHz RoF System Based on IR-MBOOK Transmitter and Non-coherent Receiver**» *International Conference on Smart Information and Communication Technologies, SmartICT 2019, September 26-28, 2019, Saïdia, Morocco*
- [29] Ali El Moussati et al. «**Optical Architecture for 60 GHz 4 × 4 MIMO Signal Distribution over Optical Fiber**» *International Conference on Smart Information and Communication Technologies, SmartICT 2019, September 26-28, 2019, Saïdia, Morocco*
- [28] Ali El Moussati et al. «**Intelligent Agriculture Platform Based on Low Energy and Cost Wireless Sensors for Efficient Water Irrigation**» *International Conference on Smart Information and Communication Technologies, SmartICT 2019, September 26-28, 2019, Saïdia, Morocco*
- [27] Ali El Moussati et al. «**Evaluation of Railway Communications System Based on 5G-RoF Technology and Millimeter Wave Band**» *International Conference on Smart Information and Communication Technologies, SmartICT 2019, September 26-28, 2019, Saïdia, Morocco*
- [26] Ali El Moussati et al. «**Study and Optimization of the System Energy in WSN with Global and Sequential Experiment Designs**» *International Conference on Smart Information and Communication Technologies, SmartICT 2019, September 26-28, 2019, Saïdia, Morocco*
- [25] Ali El Moussati et al. «**Early Forest Fire Detection with Low Power Wireless Sensors Networks**» *International Conference on Smart Information and Communication Technologies, SmartICT 2019, September 26-28, 2019, Saïdia, Morocco*
- [24] Ali El Moussati et al. «**Performance Improvement of OFDM-ROF System with Combined Adaptive Coded Modulation and Power Control**» *International Conference on Smart Information and Communication Technologies, SmartICT 2019, September 26-28, 2019, Saïdia, Morocco*
- [23] Ali El Moussati et al. «**IoT Security Management: Model and Design Issues**» *International Conference on Smart Information and Communication Technologies, SmartICT 2019, September 26-28, 2019, Saïdia, Morocco*
- [22] Ali El Moussati et al. «**Modal and harmonic analyses of a MEMS piezoelectric resonator disc with a complete metallization**» *4th World Conference on Complex Systems (WCCS), 2019, Ouarzazate, Morocco*
- [21] Ali El Moussati et al. «**Combination of a Successive Surface Experiment Design and a Hierarchical Routing Protocol to the Optimization of the System Energy in Wireless Sensor Networks**» *International Symposium on Advanced Electrical and Communication Technologies, November 21th Rabat, Morocco*
- [20] Ali El Moussati et al. «**Throughput Performance of Adaptive Modulation and Coding Schemes for WPAN Transceiver**» *International Symposium on Advanced Electrical and Communication Technologies, November 21th Rabat, Morocco*
- [19] Ali El Moussati et al. «**Performance Evaluation of Multiband 60 GHz Impulse Radio for Broadband**» *International Symposium on Advanced Electrical and Communication Technologies, November 21th Rabat, Morocco*
- [18] Ali El Moussati et al. «**Implementation of an Automatic Modulation Recognition System on a Software Defined Radio Platform**» *International Symposium on Advanced Electrical and Communication Technologies, November 21th Rabat, Morocco*
- [17] Ali El Moussati et al. «**Generation and Transmission of FBMC Signal at mm Wave Over Fiber for 5G**» *International Symposium on Advanced Electrical and Communication Technologies, November 21th Rabat, Morocco*
- [16] Ali El Moussati et al. «**Performance Analysis of Frequency Spreading FBMC in Mobile Radio Channel**» *International Symposium on Advanced Electrical and Communication Technologies, November 21th Rabat, Morocco*
- [15] Ali El Moussati et al. «**Multi-Band Radio over Fiber System Using Polarization Multiplexed Wireless MIMO Signals**» *international conference on Wireless Technologies, embedded and intelligent Systems, April 19th 2017, Fès, Morocco.*
- [14] Ali El Moussati et al. «**Improvement of BER and transmission performance by optimizing parameters of high index modulation filters**» *International conference on Wireless Technologies, embedded and intelligent Systems, April 19th 2017, Fès, Morocco.*
- [13] Ali El Moussati et al. «**2x2 MIMO Spatial Diversity for Radio over Fiber System at 60 GHz Using TSV Model**» *International conference on multimedia computing and systems, September 29, 2016, Marrakesh, Morocco.*
- [12] Ali El Moussati et al. «**On 60GHz wireless link performance in indoor and outdoor environments based on IEEE 802.15.3c**» *The 4th International Conference on Electrical Engineering 2015, December 13-15, 2015 - Boumerdes - Algeria.*

- [11] Ali El Moussati et al. «**Performance investigation of Radio over fiber link with high-speed interface of IEEE 802.15.3c**» *Mediterranean Conference on Information & Communication Technologies'2015, May 7-9, 2015 - Saïdia – Morocco.*
- [10] Ali El Moussati et al. «**Effect of duty cycle of Bragg filters on the reflection coefficient and bandwidth**» *Mediterranean Conference on Information & Communication Technologies'2015, May 7-9, 2015 - Saïdia – Morocco.*
- [9] Ali El Moussati et al. «**Adaptive Modulation and Coding for the IEEE 802.15.3c High Speed Interface Physical layer mode**» *Conference on Information & Communication Technologies'2015, May 7-9, 2015 - Saïdia – Morocco.*
- [8] Ali El Moussati et al. «**Implementation of Cognitive Radio Applications on a Software Defined Radio Platform**» *International conference on multimedia computing and systems*, April 14-16, 2014, Marrakesh, Morocco.
- [7] Ali El Moussati et al. «**Performance Evaluation of Radio over Fiber System at 60 GHz for outdoor and indoor environments**» *International conference on multimedia computing and systems*, April 14-16, 2014, Marrakesh, Morocco.
- [6] Ali El Moussati et al. «**16-QAM modulation based on quad-parallel Mach-Zehnder modulator dedicated for Radio-over-Fiber system**» *International Conference on Communication and Electronics Information*, January 12-13, 2013, Bruxelles, Belgium.
- [5] Ali El Moussati et al. «**Hardware implementation for Turbo code OFDM using Software defined Radio**» *International Conference on Complex System*, November 5-6, 2012, Agadir, Morocco.
- [4] Ali El Moussati et al. «**3D Time-domain Electromagnetic/Transport Macroscopic Numerical Physical Modelling. Application to Mm-wave GaAs photoswitch**» *Mediterranean Microwave Symposium, November 15-17, 2009, Tangiers*
- [3] Ali El Moussati et al. «**Développement d'un modèle électromagnétique numérique des composants semiconducteurs basé sur une approche physique macroscopique dans le domaine temporel. Application à la diode A.T.T. distribuée en ondes millimétriques**» *TELECOM'2007 & 5^{ème} JFMMA*, Fès, Mars 2007.
- [1] Ali El Moussati et al. «**Explicit versus implicit finite-difference approximation for semiconductor device time-domain macroscopic numerical modelling on parallel computer**» *Proceedings of the 15th Workshop on Modelling and Simulation of Electron Devices*, Pisa, Italy, July 4-5, 2005, 61-62.

▪ **Poster presentation**

- [3] Ali El Moussati et al. «**Baseband/RF co-simulation of IEEE 802.15.3C in outdoor environment at 60 GHz**» *Mediterranean Conference on Information & Communication Technologies'2015, May 7-9, 2015 - Saïdia – Morocco.*
- [2] Ali El Moussati et al. «**Développement et réalisation d'un logiciel de simulation électromagnétique pour circuits micro-ondes basé sur une approche physique macroscopique dans le domaine temporel**» *TELECOM'2009 & 6^{ème} JFMMA*. Agadir Mars 2009.
- [1] Ali El Moussati et al. «**Etude physique numérique du fonctionnement de composants semiconducteurs distribués pour applications très hautes fréquences**» *Actes de la 11ème Rencontre du Non-Linéaire*, Paris, France, 25-27 mars, 2008, 49-54.

Scientific book

- [4] Ali El Moussati et al. «**Advances in Smart Technologies Applications and Case Studies Selected Papers from the First International Conference on Smart Information and Communication Technologies, SmartICT 2019**» *Book Springer, 2020, ISBN: 978-3-030-53186-7*
- [3] Ali EL MOUSSATI «**Codes correcteurs d'erreurs, Cours et exercices corrigés**», *Bibliothèque Nationale du Royaume du Maroc, First édition 2016, ISBN : 978-9954-38-225-7*
- [2] Ali El Moussati et al «**Proceedings of the Mediterranean Conference on Information & Communication Technologies (MedCT 2015), Volume 1**» *Book Springer, April 2016, ISBN: 978-3-319-30299-7.*
- [1] Ali El Moussati et al «**Proceedings of the Mediterranean Conference on Information & Communication Technologies (MedCT 2015), Volume 2**» *Book Springer, April 2016, ISBN: 978-3-319-30296-6.*

PhD SUPERVISION

Running PhD thesis

- Yassine Ayat «**Réseaux de capteurs et services pour la médecine**»
- Mohammed Abdelouahab «**Prédiction des paramètres de qualité de l'eau d'irrigation à l'aide de modèles d'apprentissage automatique dans un environnement semi-aride**»

Defended PhD thesis

- Hachim Azzahhafi «**Étude et conception des systèmes de transmission radio sur fibre en bande millimétrique pour les applications 5G** » 2023
- Mohammed Amine Azza «**Implémentation des applications Radio Logicielle et radio intelligente sur architectures reprogrammables et reconfigurables** » 2019
- Tarik Zarrouk «**Etude, Conception et réalisation de l'Etage RF d'un système radio sur fibre optique à 60 GHz** » 2019
- Moussa El Yahyaoui «**Développement d'une Plateforme de Caractérisation d'une Solution de Convergence Optique/Radio Multistandard pour les Réseaux Fixes et Mobiles** » 2018

PEDAGOGICAL AND SCIENTIFIC RESPONSIBILITIES

- Coordinator of the Specialized Higher Education Diploma (Bac+5) in Intelligent and Connected Systems (ICS).
- Scientific Evaluator Expert affiliated with CNRST for the periods 2019-2022 and 2023-2026.
- Head of the Applied Research Support Program (PARA-1) at the University Mohammed Premier Oujda for the period 2019-2021. This project is entitled «Smart and Precise Irrigation Platform for Agriculture (PIPA).»
- Head of the scientific and technological research project, from 2012 to 2014, Morocco-Tunisian referenced, titled «Development of a Platform for Characterization of an Optical/Radio Multistandard Convergence Solution for Fixed and Mobile Networks.»

ORGANIZATION OF SCIENTIFIC EVENTS

- Chair of SmartICT'19 Conference «Smart Information & Communications Technologies» September, 26-28, 2019, Saïdia, Morocco.
- Chair of International Workshop on Green Computing & Communication Technologies (GreComTec'18), November 21-23, 2018, Rabat, Morocco.
- Chair of Mediterranean Conference on Information & Communication Technologies 2015 May 7-9, 2015, Saïdia, Morocco.
- Organizing Committee of International Workshop on Microwave & Emerging Wireless Technologies, April 14-16, 2014, Marrakesh, Morocco.
- Chair of spring school «wireless networks and emerging technologies» April 25-27, 2013, Oujda, Morocco.
- Organizing committee of First Days of Electronics and Telecommunications Electronics. May 2006, Oujda, Morocco.