



Europass Curriculum Vitae

Personal information



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Google Scholar: <https://scholar.google.com/citations?user=MgVFmyEAAAAJ&hl=en>
Scopus Author ID: <https://www.scopus.com/authid/detail.uri?authorId=57190277586>
Nationality Egyptian
Date of birth 01 January 1990
Gender Male

Current Job **Postdoc researcher within Margarita Salas grant (financed by European Union - Next Generation EU)**

Short bio

I am Kerlos Atia Abdalmalak, a postdoc researcher in the Radiofrequency, Electromagnetism, Microwaves, and Antennas (GREMA) group at Universidad Carlos III de Madrid (UC3M) and a former postdoc researcher at Universidad Politécnica de Madrid (UPM). I have a **research and development experience of 13 years** in antenna and electromagnetic, 5G technology, wireless power transfer, mobile base stations, array feeds, RF circuit design, radioastronomy receivers, machine learning, and mm-wave/THz technologies. I have 9 years of experience in antenna and RF measurements (both return loss & isolation using network analyzers and radiation patterns in anechoic chambers) for different mobile telecommunications companies.

I imported more than 1600 hours of several subjects and courses such as “**Antenna and wave propagation**”, “**Radio frequency and antenna subsystems**”, “**High frequency technology**”, “**Antenna technology**”, “**Short range wireless communications**”, “**RF wireless technology**”, “**Electronic analogue**”, “**Digital communication theory**”, “**Digital signal processing**”, “**Electrical testing labs**”, “**HFSS for antenna design**”, “**MATLAB programming**”, and supervised **1 master student and 31 students** for final-year graduation projects related to **RF and antenna designs**. Obtained an outstanding evaluation from students (**scores of 5 and 4.89 out of 5** for the year 2022/2023 in UC3M, **scores of 4.94 and 4.92 out of 5** for the year 2023/2024 in UPM, and **scores of 5 out of 5** for the year 2023/2024 in UC3M).

I have authored/co-authored **69 reviewed papers** including **17 Journal Citation Ranking "JCR" journals (16 in the first/second quartiles Q1/Q2** following Thomson Reuters) with a total impact factor (IF) **above 70**, **2 invited papers**, and **41 international conferences papers**. These publications granted more than 415 total citations, 17 i10-index, and 12 h-index (according to Google Scholar) and 260 total citations, 10 h-index (according to Scopus by Elsevier). Also, following Web of Science (WoS), these citations are coming from all world including more than 39 countries (following the WoS geographic citation map) from prestige organizations and researchers and including 47 enriched cited references and 6 review articles. Presented my research at several international conferences, workshops, and meetings in several places worldwide such as California (USA), Texas (USA), Davos (Switzerland), Paris (France), Madrid / Canary Islands / Cartagena (Spain). I have participated in **17 R&D and industrial projects (1 as PI)** and 1 educational innovation project financed by Madrid Regional, Ministry of Education, Ministry of Economy and Business, **HUAWEI**, **European Space**

Agency (ESA), SENER, Indra, and other private base station companies with total funds exceeding 3.1 million Euros.

I received the **M.Sc. degree (excellent grade)** in multimedia and communication from Carlos III University of Madrid in 2015, and the **Ph.D. degree** from the Department of Signal Theory and Communications in the field of antennas and radiometers for radio astronomy applications in 2022 (with **an excellent grade and cum laude/international mentions**). Served as a **Guest editor** for Crystals (Q2), **Reviewer** in several JCR journals **such as IEEE Transactions on Antennas and Propagation** (Q1), IEEE Communications Magazine (Q1, **IF11**), **Optics Express** (Q1), IEEE ACCESS (Q1), Progress in Electromagnetics Research (PIER) (Q1), Materials (Q1), IEEE Journal of Selected Topics in Quantum Electronics (Q1), Sensors (Q1), Photonics (Q2), Applied Sciences (Q2), Physica Scripta (Q2), IET Microwaves Antennas & Propagation (Q3), International Journal of Infrared and Millimeter Waves (IJIM) (Q3), and many other international conferences such as the European Conference on Antennas and Propagation (EuCAP).

I received the Erasmus Mundus GreenIT grant for 10 months in 2014, the European School of Antennas (ESoA) registration fee grant in 2015, the **Young Scientists Award** (2nd prize) by URSI/Spain in 2017, was selected as **IEEE Ambassador** for the IEEEExtreme 14.0 Competition at Region 8 (Europe, Middle East, and Africa) in 2020, Scientific-Publication award (**1200\$**) by Aswan University in 2020, was selected as the **IEEE section lead for Spain** for the IEEEExtreme 15.0 Competition in 2021, was elevated to **IEEE Senior Member** in 2022, the **best Ph.D. thesis in the Aerospace field (4000 Euros)** by Ayuntamiento de Madrid in 2022 (in the competition of "Premios Talento y Tecnología 2022" where more than 400 theses defended from 2019 to 2022 in several fields were competing), **Margarita Salas postdoc scholarship** in 2022, **Outstanding Ph.D. Thesis Award** by Carlos III University of Madrid (UC3M) in 2023, one of five finalist papers in the **Best Paper Award** Competition in Electromagnetics among 1172 papers submitted to the 17th European Conference on Antennas and Propagation (**EuCAP**) in 2023, accreditations of "Profesor Contratado Doctor" and "Profesor de Universidad Privada" (equivalent to tenured associate professor) by ANECA in 2023, one of the **most 23 read articles** in IEEE Transactions on Antennas and Propagation in 2023 among tens of thousands published articles in the journal since 1952, 2nd rank for Premio AtlanTTIC for **best Ph.D. thesis in telecommunications in Spain** in 2023, IEEE Antennas and Propagation Society (**AP-S**) **Postdoc Fellowship (5000\$)** in 2023, **MDPI Symmetry 2024 Travel Award (800 CHF, 1 over 2 winners in an international level)** in 2024, **IEEE Aerospace and Electronic Systems Society (AESS) Young Professionals Travel Grant** in 2024, and **best Ph.D. thesis in Signal Processing and Communications in Spain** (**1000 Euros**) for the theses defended in 2022 and 2023 by IEEE SPCOM chapter in 2024, accreditations of "**Profesor titular**" (equivalent to civil-tenured associate professor) by ANECA in 2024.

Work experience

Dates	30 December 2023 → now
Occupation or position held	Postdoc Researcher in Radiofrequency, Electromagnetism, Microwaves, and Antennas (GREMA) group.
Main activities and responsibilities	Conducting research under the framework of several R&D and industrial projects and designing high-gain dielectric resonator antenna (DRA) arrays at mm-wave bands.
Name and address of employer	Carlos III University of Madrid (UC3M), Av. de la Universidad, 30, Leganés, Madrid, 28911 Spain.
Dates	30 December 2022 → 29 December 2023
Occupation or position held	Postdoc Researcher in Electromagnetic Development and Research (DIEMAG) group in Higher Technical School of Engineering and Telecommunication Systems.
Main activities and responsibilities	Conducting research under the framework of several R&D and industrial projects and designing high-gain dielectric resonator antenna (DRA) arrays for radio astronomy applications.
Name and address of employer	Polytechnic University of Madrid "Universidad Politécnica de Madrid" (UPM), M-40, Puente de Vallecas, Madrid, 28031 Spain (one of the best 100 Universities in the world in the field of Electrical and Electronic Engineering following QS ranking).
Dates	24 July 2015 → 29 December 2022
Occupation or position held	Research Associate in Radiofrequency, Electromagnetism, Microwaves, and Antennas (GREMA) group in Signal Theory and Communications Department.
Main activities and responsibilities	Conducting research under the framework of several R&D and industrial projects, manufacturing and measurements of several antennas / RF devices, and measurements of mobile base station antennas.
Name and address of employer	Carlos III University of Madrid (UC3M), Av. de la Universidad, 30, Leganés, Madrid, 28031 Spain.
Dates	08 August 2018 → 08 November 2018
Occupation or position held	Visiting Scholar at Lyle School of Engineering (Electrical and Computer Engineering Department)
Main activities and responsibilities	Conducting research regards the design of high-gain dielectric antennas for microwave-radiation coupling into a new radioastronomy receiver based on the whispering gallery mode (WGM) resonators.
Name and address of employer	Southern Methodist University (SMU), Embrey Engineering Bldg, 3101 Dyer St, Dallas, Texas, 75205 USA.
Dates	08 December 2011 → 31 August 2014
Occupation or position held	Assistant Lecturer in Electrical Engineering Department
Main activities and responsibilities	My responsibilities are helping in teaching undergraduate courses and supervising students for final-year graduation projects related to antenna design.
Name and address of employer	Aswan University, Abu El Reesh, Aswan, 81542 Egypt.

Education

Dates	15 November 2016 → 18 March 2022
Title awarded	Ph.D. in Multimedia and Communications with an excellent grade and cum laude/international mentions .
Principal subjects / occupational skills covered	Designing UWB antennas for radio astronomy instrumentation and wireless mobile communications with a Ph.D. thesis title: "Analysis and Design of Antennas and Radiometers for Radio Astronomy Applications in Microwave, Mm-wave, and THz Bands".
Name of organization	Carlos III University of Madrid, Madrid, Spain
Level	Doctoral degree

Dates	22 September 2014 → 08 July 2015
Title awarded	M.Sc. in Multimedia and Communications with an overall grade of excellent (9.02 out of 10) .
Principal subjects / occupational skills covered	High-frequency technology - Broadband mobile communications - Digital communications - Signal processing in communication - Application of signal processing. The master thesis field is signal processing and machine learning with the title of: "Enhancement of a Text-Independent Speaker Verification System by using Feature Combination and Parallel-Structure Classifiers".
Name of organization	Carlos III University of Madrid, Madrid, Spain
Level	Master degree

Dates	18 September 2006 → 27 July 2011
Title awarded	B.Sc. in electrical engineering (major: telecommunications) with very good and honor-rank grade (Ranked 2nd among the colleagues) .
Name of organization	Aswan University, Aswan, Egypt
Level	Bachelor degree

Training

Dates	21 November 2022 → 25 November 2022
Title of qualification	Attending the 2022 European School of Antennas (ESoA 2022) (40 hours) with the title of Quantum Electromagnetics "Modeling the Nanoscale in the Real World".
Place	Madonna di Campiglio, Italy

Dates	6 November 2017 → 8 November 2017
Title of qualification	Attending the DIFRAGEOS Workshop co-located with the 3 rd FiWiN5G Winter School.
Place	Madrid, Spain

Dates	19 October 2015 → 23 October 2015
Title of qualification	Attending the 2015 European School of Antennas (ESoA 2015) (40 hours)
Place	Madrid, Spain

Dates	31 July 2011 → 22 September 2011
Title of qualification	An intensive course in generations of mobile networks (GSM-CDMA-UMTS-LTE) (80 hours)
Place	Aswan, Egypt

Dates	01 August 2010 → 20 August 2010
Title of qualification	Internship in Telecom Egypt company
Place	Luxor
Principal subjects / occupational skills covered	Understanding the nature of Telecommunications. Understanding the advantages and disadvantages of wired and wireless communications.

Languages										
Assessment										
European level (*)										
English	Understanding		Speaking				Writing			
	Listening		Reading		Spoken interaction		Spoken production			
	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
Spanish	B1	Independent user	B1	Independent user	A2	Basic User	A2	Basic User	A2	Basic User
Arabic	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user

(*) [*Common European Framework of Reference \(CEF\) level*](#)

Skills and competencies

Social

Good oral and written communication skills in English.
 Ability to work in a group or individually according to the job required.
 Excellent interpersonal skills to work effectively with team members from different backgrounds and with different tasks.
 Willingness to travel internationally for project meetings and international conferences.

Organizational

Ability to work collaboratively with colleagues.
 Demonstrated the ability to work with minimum supervision.
 Potential to provide academic supervision to undergraduate students.
 Demonstrated capability in project management (leading several teams of 5 to 10 undergraduate students at Aswan University).

Technical

Writing proposals.
 Potential for contributing to research program development.
Antenna and RF measurements, both return loss & isolation using **network analyzers** and radiation patterns in **anechoic chambers** (7 years' experience).
 3D antenna printing.
 MmWave antenna and optic system integration and measurements.

Computer

Programming with **MATLAB**, C++, JAVA, Visual Basic, and FORTRAN.
 Fluent use of several electromagnetic **(EM) simulators** (11 years' experience): **HFSS**, **CST**, GRASP, and FEKO.
RF circuit design tools (Microwave office AWR, ANSYS Circuit, and Agilent ADS).

Research management

Participated as a **guest editor** for

- Crystals journal (ISSN: 2073-4352), Impact factor JCR (2021): 2.670 (category: CRYSTALLOGRAPHY, 12/26, **Q2**, T2).

Participated as a **journal reviewer** for

- IEEE Transactions on Antennas and Propagation** (ISSN: 0018-926X), Impact factor JCR (2021): **4.824** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 68/276, **Q1**, T1).
- IEEE Communications Magazine** (0163-6804), Impact factor JCR (2022): **11.2** (category: TELECOMMUNICATIONS, 4/88, **Q1**, T1).
- Optics Express journal (ISSN: 1094-4087), Impact factor JCR (2019): **3.669** (category: OPTICS, 19/97, **Q1**, T1).
- IEEE Access (ISSN: 2169-3536), Impact factor JCR (2019): **3.745** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 61/266, **Q1**, T1).
- Progress in Electromagnetics Research (PIER) journal (ISSN: 1559-8985), Impact factor JCR (2021): **6.0** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 34/276, **Q1**, T1).
- IEEE Journal of Selected Topics in Quantum Electronics (1077-260X), Impact factor JCR (2021): 4.653 (category: OPTICS, 20/100, Q1, T1).
- Materials journal (ISSN: 1996-1944), Impact factor JCR (2021): **3.748** (category: METALLURGY & METALLURGICAL ENGINEERING, 18/79, **Q1**, T1).
- Sensors journal (ISSN: 1424-8220), Impact factor JCR (2020): **3.576** (category: INSTRUMENTS & INSTRUMENTATION, 14/64, **Q1**, T1).
- Photonics (ISSN: 2304-6732), Impact factor JCR (2020): **2.676** (category: OPTICS, 37/99, **Q2**, T2).

- Physica Scripta (ISSN: 0031-8949), Impact factor JCR (2020): **2.487** (category: PHYSICS, MULTIDISCIPLINARY, 40/86, **Q2, T2**).
- Applied Sciences (ISSN: 2076-3417), Impact factor JCR (2020): **2.679** (category: ENGINEERING, MULTIDISCIPLINARY, 38/90, **Q2, T2**).
- IET Microwaves Antennas & Propagation (ISSN: 1751-8725), Impact factor JCR (2021): 1.824 (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 167/273, **Q3, T2**).
- Electronics (ISSN: 2079-9292), Impact factor JCR (2022): 2.690 (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 139/276, **Q3, T2**).
- Journal of Infrared Millimeter and Terahertz Waves (ISSN: 1866-6892), Impact factor JCR (2018): 1.762 (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 155/265, **Q3, T2**).

Participated in the **conference-committee** as

- TPC member in the International Conference on Innovative Trends in Computer Engineering (**ITCE2020**) which was held in Aswan, Egypt.
- Publication Chair in the International Symposium on Computer Graphics, Multimedia and Image Processing (**CGMIP2020**) which was held in Saint Petersburg, Russia.
- TPC member in the International Conference on Innovative Trends in Computer Engineering (**ITCE2019**) which was held in Aswan, Egypt.

Participated as a **conference reviewer** for

- The XXXIX national symposium of the International Scientific Radio Union (**URSI 2024**), which will held in Cuenca, Spain.
- The 18th European Conference on Antennas and Propagation (**EuCAP2024**) which will be in Glasgow, Scotland.
- The 17th European Conference on Antennas and Propagation (**EuCAP2023**) which was held in Florence, Italy.
- The 16th European Conference on Antennas and Propagation (**EuCAP2022**) which was held in Madrid, Spain.
- The 15th European Conference on Antennas and Propagation (**EuCAP2021**) which was held in Düsseldorf, Germany.
- The 14th European Conference on Antennas and Propagation (**EuCAP2020**) which was supposed to be held in Copenhagen, Denmark but was held online instead due to the Coronavirus situation.
- The International Conference on Electrical, Electronic, Communication and Control Engineering (**ICEECC2019**) which was held in Melaka, Malaysia.
- Recent Advances in Communication Theory, Information Theory, Antennas and Propagation (**CIAP2019**) which was held in Kerala, India.
- The International Conference on Electrical, Electronic, Communication and Control Engineering (**ICEECC2018**) which was held in Johor Bahru, Malaysia.
- The 12th European Conference on Antennas and Propagation (**EuCAP2018**) which was held in London, UK.
- The International Conference on Electrical, Electronic, Communication and Control Engineering (**ICEECC2017**) which was held in Kuala Lumpur, Malaysia.
- The 17th Asia Simulation Conference (**AsiaSim2017**) which was held in Melaka, Malaysia.
- The 11th European Conference on Antennas and Propagation (**EuCAP2017**) which was held in Paris, France.
- The International Conference on Electrical, Electronic, Communication and Control Engineering (**ICEECC2016**) which was held in Johor Bahru, Malaysia.
- The 9th European Conference on Antennas and Propagation (**EuCAP2015**) which was held in Lisbon, Portugal.

Publications

[Quality indicators of journal papers are provided according to the edition of the corresponding year of Journal Citation Reports (JCR), Institute for Scientific Information (ISI) which is known as "Thomson Reuters" or "Web of Science" indexing.]

Book chapter:

- [1] K. A. Abdalmalak, A. E. Yousfi, V. G. Posadas, and D. S. Vargas, "Massive MIMO Antenna Arrays for Low-frequency Bands", In Title of Book: Innovation in MIMO Systems, IntechOpen, June 2024, under review.

JCR Journal publications:

- [2] J. A. Ortiz-Fuentes, **K. A. Abdalmalak**, and D. S. Vargas, "Frequency Independent Super Wideband Volcano Smoke Antenna with Symmetric Ground Plane-Radiator", Under review in IEEE Antennas and Wireless Propagation Letters (ISSN: 1536-1225). Impact factor JCR (2023): 3.7 (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 112/352, **Q2, T2**).

- [3] A. E. Yousfi, A. Lamkaddem, **K. A. Abdalmalak**, and D. S. Vargas, "Polarization Reconfigurable

- Single Layer CPW-Fed Metasurface Antenna", Under review in IEEE Transactions on Antennas and Propagation (ISSN: 0018-926X).
Impact factor JCR (2022): **5.7** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 55/275, **Q1, T1**).
- [4] J. A. Ortiz-Fuentes, J. Silva-Montero, G. M. Galvan-Tejada, **K. A. Abdalmalak**, and D. S. Vargas, "Super Wide Band 3D and 2D Volcano Smoke Antenna with Curved Profile Ground Plane for 5G and B5G Communications", Under review (2nd round) in IEEE Transactions on Antennas and Propagation (ISSN: 0018-926X).
Impact factor JCR (2022): **5.7** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 55/275, **Q1, T1**).
- [5] K. F. Alsirhani, **K. A. Abdalmalak**, C. S. Lee, A. A. Althuwayb, V. G. Posadas, L. E.G. Muñoz, "Enhancement of gain and bandwidth of cylindrical dielectric resonator antenna excited by cavity-backed slot," Alexandria Engineering Journal (ISSN: 1110-0168), vol. 104, pp. 480-489, October 2024. <https://doi.org/10.1016/j.aej.2024.07.129>
Impact factor JCR (2023): **6.2** (category: ENGINEERING, MULTIDISCIPLINARY, 9/179 "top 5%", **Q1, T1**)
- [6] A. E. Yousfi, **K. A. Abdalmalak**, A. Lamkaddem, A. M. Barrera, B. Biscontin, and D. S. Vargas, "Miniaturized Dual-Polarized, High-Gain, and Wideband Dielectric Resonator Antenna For Low Band Massive MIMO Applications", Progress in Electromagnetics Research-PIER (ISSN: 1070-4698), vol. 179, pp. 101-111, July 2024. <https://doi.org/10.2528/PIER24021303>
Impact factor JCR (2022): **6.7** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 42/275, **Q1, T1**).
- [7] E. Falcón-Gómez, V. D. Falco, **K. A. Abdalmalak**, A. Amor-Martín, V. D. L. Rubia, G. Santamaría-Botello, and L. E. G. Muñoz, "Interactions between linear polarized gravitational waves and electromagnetic waves in an electromagnetic analog of gravity", Physical Review D (ISSN: 2470-0010), Vol. 107, No. 12, pp. 3114-3122, June 2023. <https://doi.org/10.1103/PhysRevD.107.124042>
Impact factor JCR (2022): **5.0** (category: ASTRONOMY & ASTROPHYSICS, 15/69, **Q1, T1**).
- [8] A. E. Yousfi, A. Lamkaddem, **K. A. Abdalmalak**, and D. S. Vargas, "A Broadband Circularly Polarized Single-Layer Metasurface Antenna Using Characteristic-Mode Analysis", **IEEE Transactions on Antennas and Propagation** (ISSN: 0018-926X), Vol. 71, No. 4, pp. 3114-3122, April 2023. <https://doi.org/10.1109/TAP.2023.3239104>
Top highly accessed paper in the TAP journal for April, May, December 2023, January and February 2024 and **one of the most 23 read articles** in IEEE Transactions on Antennas and Propagation in 2023.
Impact factor JCR (2022): **5.7** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 55/275, **Q1, T1**).
- [9] **K. A. Abdalmalak**, A. A. Althuwayb, C. S. Lee, G. Santamaría-Botello, E. Falcón-Gómez, L. E. García-Castillo, and L. E. García-Muñoz, "Standing-Wave Feeding for High-Gain Linear Dielectric Resonator Antenna (DRA) Array", Sensors (ISSN: 1424-8220), Vol. 22, No. 8, April 2022. <https://doi.org/10.3390/s22083089>
Impact factor JCR (2020 "at submission and acceptance year"): **3.576** (category: INSTRUMENTS & INSTRUMENTATION, 14/64, **Q1, T1**).
Impact factor JCR (2022): **3.9** (category: INSTRUMENTS & INSTRUMENTATION, 19/63, **Q2, T1**).
- [10] A. Lamkaddem, A. E. Yousfi, **K. A. Abdalmalak**, V. G. Posadas, and D. S. Vargas, "Circularly polarized miniaturized implantable antenna for leadless pacemaker devices", **IEEE Transactions on Antennas and Propagation** (ISSN: 0018-926X), Vol. 70, No. 8, pp. 6423-6432, August 2022. <https://doi.org/10.1109/TAP.2022.3161370>
Top highly accessed in the IEEE Transactions on Antennas and Propagation for the month of September 2022.
Impact factor JCR (2020): **4.388** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 52/273, **Q1, T1**).
- [11] **K. A. Abdalmalak**, G. S. Botello, M. I. Suresh, E. Falcón-Gómez, A. R. Lavado, L. E. García-

- Muñoz, "An Integrated mm-wave Satellite Radiometer Working at Room-temperature with High Photon Conversion Efficiency", *Sensors* (ISSN: 1424-8220), Vol. 22, No. 6, March 2022. <https://doi.org/10.3390/s22062400>
Impact factor JCR (2020 "at submission and acceptance year"): **3.576** (category: INSTRUMENTS & INSTRUMENTATION, 14/64, **Q1, T1**).
Impact factor JCR (2022): **3.9** (category: INSTRUMENTS & INSTRUMENTATION, 19/63, **Q2, T1**).
- [12] A. E. Yousfi, A. Lamkaddem, **K. A. Abdalmalak**, and D. S. Vargas, "A Miniaturized Triple-Band and Dual-Polarized Monopole Antenna based on a CSRR perturbed Ground Plane", *IEEE Access* (ISSN: 2169-3536), Vol. 9, pp. 164292-164299, December 2021. <https://doi.org/10.1109/ACCESS.2021.3134497>
Impact factor JCR (2021): **3.476** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 105/276, **Q2, T2**).
- [13] G. Santamaría-Botello, Z. Popovic, **K. A. Abdalmalak**, D. Segovia-Vargas, E. R. Brown, and L. E. G. Muñoz, "Sensitivity and noise in THz electro-optic upconversion radiometers", *Scientific Reports* (ISSN: 2045-2322), Vol. 10, June 2020. <https://doi.org/10.1038/s41598-020-65987-x>
Impact factor JCR (2020): **4.380** (category: MULTIDISCIPLINARY SCIENCES, 17/72, **Q1, T1**).
- [14] **K. A. Abdalmalak**, G. S. Botello, S. L. Romano, A. R. Lavado, J. Flygare, J. A. L. Fernández, J. M. S. Puente, L. E. G. Castillo, D. S. Vargas, M. Pantaleev, and L. E. G. Muñoz, "Ultrawideband Conical Log-Spiral Circularly Polarized Feed for Radio Astronomy", *IEEE Transactions on Antennas and Propagation* (ISSN: 0018-926X), Vol. 68, No. 3, pp. 1995-2007, March 2020. <https://doi.org/10.1109/TAP.2019.2949700>
Impact factor JCR (2020): **4.388** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 52/273, **Q1, T1**).
- [15] D. Warmowska, **K. A. Abdalmalak**, L. E. G. Muñoz, and Z. Raida, "High-gain, Circularly-polarized THz Antenna with Proper Modeling of Structures with Thin Metallic Wall", *IEEE Access* (ISSN: 2169-3536), Vol. 8, pp. 125223-125233, 2020. <https://doi.org/10.1109/ACCESS.2020.3007576>
Impact factor JCR (2019): **3.745** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 61/266, **Q1, T1**).
- [16] A. A. Althuwayb, **K. A. Abdalmalak**, C. S. Lee, G. Santamaría-Botello, L. E. García-Castillo, D. Segovia-Vargas, and L. E. García-Muñoz, "3-D-Printed Dielectric Resonator Antenna Arrays Based on Standing-Wave Feeding Approach", *IEEE Antennas and Wireless Propagation Letters* (ISSN: 1536-1225), Vol. 18, No. 10, pp. 2180-2183, October 2019. <https://doi.org/10.1109/LAWP.2019.2939734>
Impact factor JCR (2019): **3.726** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 62/266, **Q1, T1**).
- [17] A. Rivera-Lavado, L. E. García-Muñoz, D. Lioubtchenko, S. Preu, **K. A. Abdalmalak**, G. Santamaría-Botello, D. Segovia-Vargas, and A. V. Räisänen, "Planar Lens-Based Ultra-Wideband Dielectric Rod Waveguide Antenna for Tunable THz and Sub-THz Photomixer Sources", *Journal of Infrared Millimeter and Terahertz Waves* (ISSN: 1866-6892), Vol. 40, No. 8, pp. 838-855, August 2019. <https://doi.org/10.1007/s10762-019-00612-1>
Impact factor JCR (2019): **1.765** (category: ENGINEERING, ELECTRICAL & ELECTRONIC, 158/266, **Q3, T2**).
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- [74] G. S. Botello, **K. A. Abdalmalak**, J. D. Miguel, R. Hoyland, J. R. Martín, F. Sedlmeir, G. H. Döhler, E. Brown, H. G. L. Schwefel, D. Segovia-Vargas, and L. E. García-Muñoz, "Nonlinear up-conversion for room-temperature high-sensitivity microwave radiometers", 3rd Australian New Zealand Conference on Optics and Photonics (**ANZCOP 2017**), Queenstown, New Zealand, 4-7 December 2017.
1. Academic year 2023/2024, 2nd semester, theory and lab of the subject "**Antenna Technology**" for the **Master in Advanced Communications Technologies**, Carlos III University of Madrid (UC3M), Spain.
 2. Academic year 2023/2024, 1st semester, theory and lab of the subject "**Antenna technology**" for the **Master in Wireless Communications**, Universidad Politécnica de Madrid (UPM), Spain. (Obtained an outstanding evaluation of **4.92 out of 5**).
 3. Academic year 2023/2024, 1st semester, theory and lab of the subject "**RF wireless technology**" for the **Master in Wireless Communications**, Universidad Politécnica de Madrid (UPM), Spain. (Obtained an outstanding evaluation of **4.94 out of 5**).
 4. Academic year 2023/2024, 1st semester, responsible for the lab of the subject "**Transmission and propagation of waves**" for the Degrees in **Communications Electronics and Telecommunications Systems**, Universidad Politécnica de Madrid (UPM), Spain.
 5. Academic year 2022/2023, 2nd semester, theory and lab of the subject "**Short range wireless communications**" for the **Master in Wireless Communications**, Universidad Politécnica de Madrid (UPM), Spain.
 6. Academic year 2022/2023, 2nd semester, responsible for the lab of the subject "**Analogue electronics**" for the **Degree in Telecommunications**, Universidad Politécnica de Madrid (UPM), Spain.
 7. Academic year 2022/2023, 1st semester, theory of the subject "**High frequency technology**" for the **Master in Advanced Communications Technologies**, Carlos III University of Madrid, Spain. (Obtained an outstanding evaluation **of 5 out of 5** and a **congratulatory letter** from the Deputy Vice-Rector for Quality "Vicerrectora Adjunta De Calidad" of UC3M).
 8. Academic year 2022/2023, 1st semester, responsible for the lab of the subject "**Radio frequency and antenna subsystems**" for the **Master in Telecommunications Engineering**, Carlos III University of Madrid, Spain. (Obtained an outstanding evaluation of **4.89 out of 5** and a **congratulatory letter** from the Deputy Vice-Rector for Quality "Vicerrectora Adjunta De Calidad" of UC3M).
 9. Academic year 2022/2023, 1st semester, responsible for the lab of the subject "**Radio frequency and antenna subsystems-2**" for the **Master in Telecommunications Engineering**, Puerta de Toledo Campus, Carlos III University of Madrid, Spain. (Obtained an outstanding evaluation of **4.53 out of 5** and a **congratulatory letter** from the Deputy Vice-Rector for Quality "Vicerrectora Adjunta De Calidad" of UC3M).
 10. Academic year 2013/2014, 2nd semester, responsible for the practices of the subject "**Digital signal processing**" for the 3rd year telecommunications and power engineering, Aswan faculty of engineering.
 11. Academic year 2013/2014, 2nd semester, responsible for the lab sessions of the "**Electrical testing**" for the 1st year electrical engineering, 3rd and 4th year telecommunications engineering, Aswan faculty of engineering.
 12. March 2014, an intensive course with the title "**HFSS for antenna design**" for students in the final year at Arab Academy for Science, Technology & Maritime Transport (AAST).
 13. Academic year 2013/2014, 1st semester, responsible for the practices of the subject "**Antenna and wave propagation**" for the 3rd year telecommunications engineering, Aswan faculty of engineering.
 14. Academic year 2013/2014, 1st semester, responsible for the lab sessions of the "**Electrical**

	<p>testing” for the 2nd electrical engineering, 3rd, and 4th-year telecommunications engineering, Aswan faculty of engineering.</p> <p>15. Academic year 2012/2013, 2nd semester, responsible for the practices of the subject “Digital signal processing” for the 3rd year telecommunications and power engineering, Aswan faculty of engineering.</p> <p>16. Academic year 2012/2013, 2nd semester, responsible for the lab sessions of the “Electrical testing” for the 3rd and 4th-year telecommunications engineering, Aswan faculty of engineering.</p> <p>17. February 2013, an intensive course with the title “MATLAB basics” for students with different backgrounds.</p> <p>18. February 2013, an intensive course with the title “MATLAB programming” for students with different backgrounds.</p> <p>19. Academic year 2012/2013, 1st semester, responsible for the practices of the subject “Digital communication theory” for the 4th year telecommunications engineering, Aswan faculty of engineering.</p> <p>20. Academic year 2012/2013, 1st semester, responsible for the practices of the subject “Antenna and wave propagation” for the 3rd year telecommunications engineering, Aswan faculty of engineering.</p> <p>21. Academic year 2012/2013, 1st semester, responsible for the lab sessions of the “Electrical testing” for the 2nd year electrical engineering, 3rd and 4th year telecommunications engineering, Aswan faculty of engineering.</p> <p>22. May 2012, an intensive course with the title “MATLAB programming” for students with different backgrounds.</p> <p>23. Academic year 2011/2012, 2nd semester, responsible for the lab sessions of the “Electrical testing” for the 3rd and 4th-year telecommunications engineering, Aswan faculty of engineering.</p> <p>24. Academic year 2011/2012, 2nd semester, responsible for the practices of the subject “Digital signal processing” for the 3rd year telecommunications and power engineering, Aswan faculty of engineering.</p>
Invited talks and seminars	<p>25. An invited seminar of 2 sessions entitled "Introduction to RFID/NFC technology in transport systems" was offered to undergraduate, master, and PhD students of the Universidad Politécnica de Madrid (UPM) on March 11 and 12 2024, with a total duration of 5 hours. This seminar has been one of the advanced research seminars offered by UPM's Escuela Técnica Superior de Ingeniería y Sistemas de Telecomunicación during course 2023/2024, with an attendance of 17 students and 3 professors. Link: https://www.etsist.upm.es/estudios-ingenieria-sistemas-telecomunicaciones-madrid/masters-ingenieria-madrid/seminarios-de-investigaci-n?idioma=EN</p> <p>26. An invited workshop of 2-hours on Near Field Communications (NFC)" on March 14 2024, for the students of the program of "Master in Wireless Communications" at Universidad Politécnica de Madrid (UPM) with an attendance of 7 students.</p> <p>27. Participated as a speaker in the activities organized by Universidad Carlos III de Madrid (UC3M) on the Madrid Science and Innovation Week (Semana de la Ciencia y la Innovación de Madrid) 2023, in the seminar of "What the eye does not see: what makes it possible for a phone can you watch videos?" [Lo que el ojo no ve: ¿qué es lo que hace posible que en un teléfono puedas ver videos?] held on 13 November 2023, with an approximate duration of 1h.</p>
Supervision of master and final-year graduation projects	
Name	"Bi-directional dual-band 3-D-printed antenna for 5G railway applications"
Aim	The master's thesis aims to design a dual-band Dielectric Resonator Antennas (DRAs) tailored for railway communications at microwave and mm-wave ranges.
Place	Universidad Politécnica de Madrid (UPM), Spain.
Number of students	1 (Zhou Feihong)
Academic year	2023/2024

Name	"Radio frequency identification (RFID) Student Kit".
Aim	Design and implement all necessary hardware and software components to allow undergraduate or master's students to learn, in effective way, contactless wireless communications technology.
Place	Universidad Politécnica de Madrid (UPM), Spain.
Number of students	1 (Alejandro Rábade Barrio)
Academic year	2023/2024
Name	"Design, simulation, and implementation of RF energy harvesting system for energizing low power devices".
Aim	Studying the use of electromagnetic waves in the airspace to charge low-power devices such as wireless sensors.
Place	Aswan faculty of engineering, Egypt.
Number of students	10
Academic year	2013/2014
Name	"Design a microstrip RFID (Radio Frequency Identification) tag antenna ".
Aim	Designing microstrip patch antenna using HFSS simulator for RFID applications.
Place	Aswan faculty of engineering, Egypt.
Number of students	7
Academic year	2012/2013
Name	"Simulation of LTE communication system and PAPR reduction".
Aim	Designing and simulating a complete 4G communication system with the main goal of minimizing the peak to average power ratio of the system.
Place	Aswan faculty of engineering, Egypt.
Number of students	13
Academic year	2011/2012
Management of research projects	
Dates	July 2024 – December 2026
Name	"Machine learning optimization of heat pump architectures based on wireless power transfer sensors with high gain antennas".
Awarded by	Autonomous Community of Madrid (CAM), Ministry of Education and Research [Spanish original name: "Comunidad Autónoma de Madrid (CAM) Consejería de Educación e Investigación"].
Reference	WiHEAT-CM-UC3M
Place	Carlos III University of Madrid
Coordinating Researcher	Kerlos Atia Abdalmalak and Jesús Gómez Hernández
Granted Amount	75,000.00 euros
Link	https://researchportal.uc3m.es/display/act565106
Dates	October 2024 – March 2025
Name	Technological consultancy in the development of S3TTR. [Spanish original name: "Consultoría tecnológica en el desarrollo de S3TTR"].
Awarded by	Celestia TTI
Place	Carlos III University of Madrid
Coordinating Researcher	Kerlos Atia Abdalmalak and Adrian Amor Martin
Granted Amount	23,529.42 euros
Participation in research projects	
Dates	January 2019 – December 2022
Name	"MARTINLARA-CM. Millimeter wave Array at Room Temperature for Instruments in Leo Altitude Radio Astronomy".
Awarded by	Autonomous Community of Madrid (CAM), Ministry of Education and Research [Spanish original name: "Comunidad Autónoma de Madrid (CAM) Consejería de Educación e Investigación"].

Reference	S2018/NMT-4333
Place	Carlos III University of Madrid
Coordinating Researcher	Luis Enrique García-Muñoz
Granted Amount	930,857.50 euros
Link	https://martinlara3.webnode.es/
Dates	November 2019 – November 2020
Name	“Massive MIMO Antenna in 700 MHz Band for Huawei”
Awarded by	HUAWEI Technologies Duesseldorf GMBH
Place	Carlos III University of Madrid
Coordinating Researcher	Daniel Segovia Vargas
Granted Amount	151,500.00 euros
Link	https://researchportal.uc3m.es/display/act546195
Dates	December 2020 – October 2021
Name	“A Low-Frequency and Wide-Band Reflector Antenna Feed for Future Earth Observation Radiometers”
Awarded by	EUROPEAN SPACE AGENCY (ESA) under a subcontract from the prime contractors EOSOL Aerospace Division and Airbus Defence and Space
Place	Carlos III University of Madrid
Coordinating Researcher	Luis Enrique García-Muñoz
Links	https://www.grupoeosol.com/en/eosol-group/eos-engineering-aerospace-airbus-esa/ https://nebula.esa.int/content/low-frequency-and-wide-band-reflector-antenna-feed-future-earth-observation-radiometers
Dates	June 2020 – May 2023
Name	Radiometers based on superior photonic conversion in range of next generation submillimeter for earth observation. [Spanish original name: “Radiómetros basados en conversión superior fotónica en rango de submilimétricas de próxima generación para observación de la tierra”].
Awarded by	State Research Agency (AEI) [Spanish original name: “Agencia Estatal De Investigacion (AEI)”].
Reference	PID2019-109984RB-C41
Place	Carlos III University of Madrid
Coordinating Researcher	Luis Enrique García-Muñoz and Daniel Segovia Vargas
Granted Amount	233,651.00 euros
Dates	January 2024 – December 2025
Name	Advanced Electronic Radiometer in the subTHz range for Earth Observation. [Spanish original name: “Radiómetro Avanzado Electrónico en el rango de subTHz para la Observación de la Tierra”].
Awarded by	State Research Agency (AEI) [Spanish original name: “Agencia Estatal De Investigacion (AEI)”].
Reference	PDC2023-145929-C31
Place	Carlos III University of Madrid
Coordinating Researcher	Daniel Segovia Vargas
Granted Amount	114,925.80 euros
Link	https://researchportal.uc3m.es/display/act562874
Dates	June 2022 – December 2022
Name	Design a lens for a phased array [Spanish original name: “Diseño de lente para phased array”].
Awarded by	SENER company
Place	Carlos III University of Madrid
Coordinating Researcher	Luis Enrique García-Muñoz
Granted Amount	24,200.00 euros
Link	https://researchportal.uc3m.es/display/act556162
Dates	July 2018 – June 2021
Name	Base station antenna to support new 5G Carrier Aggregation services. [Spanish original name: “Antena de estación base para soportar nuevos servicios 5G Carrier Aggregation (ANABANTA5G)”].
Awarded by	

Reference	Ministry of Economy and Business [Spanish original name: "Ministerio de Economía Y Empresa"].
Place	RTC-2017-6394-7
Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Daniel Segovia Vargas
Links	415,467.35 euros http://grema.webs.tsc.uc3m.es/research/antennas-rf/anabanta5g/
Dates	
Name	December 2019 – December 2022
Awarded by	Photon counting receiver working at room temperature. [Spanish original name: "Receptor de conteo de fotones trabajando a temperatura ambiente (REFTA)"].
Place	SENER company
Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Luis Enrique García-Muñoz
Links	135,000.00 euros https://www.fundacion.sener/fundacion-sener-uc3m-apoyo-investigacion/ https://researchportal.uc3m.es/display/act542734
Dates	
Name	November 2022 – November 2023
Awarded by	Contract for technical development services for monitoring antenna in the 20-100 MHz band with ferrite cards. [Spanish original name: "Contrato de servicios técnicos de desarrollo antena de monitorización en banda 20-100 MHz con tarjetas con ferrita"].
Place	INDRA SISTEMAS, S.A
Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Daniel Segovia Vargas
Link	34.456,00 euros https://researchportal.uc3m.es/display/act555622
Dates	
Name	July 2015 – December 2018
Awarded by	Development of Photonic and Radiofrequency Instrumentations and Application to Space Geodesy Experimental Techniques. [Spanish original name: "Desarrollos instrumentales fotónicos y de radiofrecuencia y aplicación a técnicas experimentales de geodesia espacial (DIFRAGEOS)"].
Reference	Autonomous Community of Madrid (CAM), Ministry of Education and Research [Spanish original name: "Comunidad Autónoma de Madrid (CAM) Consejería de Educación e Investigación"].
Place	S2013/ICE-3004
Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Magdalena Salazar Palma and Guillermo Carpintero del Barrio
Link	317,671.40 euros http://grema.webs.tsc.uc3m.es/difrageos-main/
Dates	
Name	July 2015 – December 2017
Awarded by	Development of an integrated communications system with high data rate in THz frequency . [Spanish original name: "Desarrollo de un sistema integrado de comunicaciones de alta tasa de datos en frecuencia de THz"].
Reference	Ministry of Economic Affairs and Digital Transformation [Spanish original name: "Ministerio De Asuntos Economicos Y Transformacion Digital"].
Place	TEC2013-47753-C3-2-R
Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Luis Enrique García-Muñoz and Daniel Segovia Vargas 238,854.00 euros
Dates	
Name	December 2016 – December 2020
Awarded by	High-sensitivity receivers for integrated wireless communications transmitter and receiver modules in the THz range. [Spanish original name: "Receptores de alta sensibilidad para módulos transmisores y receptores integrados de comunicaciones inalámbricas en rango de THz"].
Reference	Ministry of Economic Affairs and Digital Transformation [Spanish original name: "Ministerio De Asuntos Economicos Y Transformacion Digital"].
Place	TEC2016-76997-C3-2-R

Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Luis Enrique García-Muñoz and Daniel Segovia Vargas 164,560.00 euros
Dates	
Name	January 2021 – June 2022
Awarded by	Miniaturised Antennas for Planetary Mission Probes
Place	SENER company
Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Daniel Segovia Vargas 65,984.75 euros
Link	https://researchportal.uc3m.es/display/act538453
Dates	
Name	January 2018 – July 2018
Awarded by	Design and implementation of directive antennas in the GPS band for the industrialization of the no-jam-zone product. [Spanish original name: "Diseño e implementación de antenas directivas en la banda GPS para la industrialización del producto NOJAMZONE de CENTUM SOLUTIONS S.L."].
Place	"CENTUM SOLUTIONS S.L. Company".
Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Daniel Segovia Vargas 30,400.00 euros
Link	https://researchportal.uc3m.es/display/act542998
Dates	
Name	February 2020 – March 2020
Awarded by	Electromagnetic simulation of structures in microwave ovens of turntable type. [Spanish original name: "Simulación Electromagnética de Estructuras en Horno de Microondas de Tipo Turntable."].
Place	"LEKUE S.L. Company".
Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Luis Emilio García-Castillo 25,950.00 euros
Link	https://researchportal.uc3m.es/display/act538272
Dates	
Name	July 2015 – June 2021
Awarded by	Measurement of base station antennas of a number of companies with Starlab Satimo granted by Telefonica . [Spanish original name: "Medida de antenas de distintas empresas con Starlab Satimo cedido por Telefónica"].
Place	Several telecommunications companies.
Coordinating Researcher	Carlos III University of Madrid
Granted Amount	Daniel Segovia Vargas Around 60,000.00 euros/year
Participation in educational innovation projects	
Dates	
Name	February 2024 – October 2024
Awarded by and place	Design and implementation of an "RFID Student's Box" for the self-study of contactless communication systems [Spanish original name: "Diseño e implementación de una "RFID Student's Box" para el autoaprendizaje de sistemas de comunicación sin contacto"].
Reference	Universidad Politécnica de Madrid
Coordinating Researcher	IE24.5904
Granted Amount	Antonio Perez Yuste and Francisco Jose Arques Orobon 1,745.00 euros
Link	https://innovacioneducativa.upm.es/proyectos-ie/informacion?anyo=2023-2024&id=1197
References	
Several recommendation letters are available on request from:	

Antenna professors at different universities in Europe, USA, Asia, and Africa
Engineers and project heads in different wireless communications industrial companies in Europe.