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Research Interests

Design of millimeter wave antennas

Numerical modeling of electromagnetic problems

Electromagnetic wave propagation and raditation in metamaterials

Coordinate-free approach to electromagnetic waves

Academic Qualifications

University/Institution	Type	Degree	Period
ISCTE-Instituto Universitário de Lisboa	Aggregation	Ciência e Tecnologias da Comunicação	2022
Instituto Superior Técnico -UTL	PhD	Engenharia Electrotécnica e de Computadores	2010
Instituto Superior Técnico - UTL	M.Sc.	Engenharia Informática e de Computadores	2006
Instituto Superior Técnico - UTL	Licenciate	Engenharia Informática e de Computadores	2004

Teaching Activities

Teaching Year	Sem.	Course Name	Degree(s)	Coord.
2025/2026	2º	Guided and Wireless Transmission Fundamentals	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2025/2026	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2024/2025	2º	Guided and Wireless Transmission Fundamentals	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2024/2025	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2023/2024	2º	Guided and Wireless Transmission Fundamentals	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2023/2024	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2022/2023	2º	Guided and Wireless Transmission Fundamentals	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2022/2023	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2021/2022	2º	Guided and Wireless Transmission Fundamentals	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2021/2022	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2020/2021	2º	Guided and Wireless Transmission Fundamentals	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2020/2021	1º	Calculus Topics I	Bachelor Degree in Data Science;	No

2020/2021	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2019/2020	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2019/2020	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2018/2019	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2018/2019	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2017/2018	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2017/2018	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2016/2017	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2016/2017	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2016/2017	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2016/2017	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2015/2016	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2015/2016	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2015/2016	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2015/2016	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2014/2015	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2014/2015	2º	Propagation and Radiation of Electromagnetic Waves		Yes

2014/2015	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2014/2015	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2013/2014	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2013/2014	2º	Propagation and Radiation of Electromagnetic Waves		Yes
2013/2014	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes
2013/2014	1º	Electromagnetism	Bachelor Degree in Telecommunications and Computer Engineering;	Yes

Supervisions

• Ph.D. Thesis

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Fabio Cardoso	Development of Reconfigurable Metasurfaces for 6G applications	Portuguese	Developing	Iscte
2	Fábio Martinho Cardoso	Development of Reconfigurable Metasurfaces for 6G applications	English	Developing	Iscte

• M.Sc. Dissertations

- Ongoing

	Student Name	Title/Topic	Language	Status	Institution
1	Iaia Seide Injai	Characterization of plastic pollution on the coast of Badim, Guinea-Bissau.	--	Developing	Iscte

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
1	Duarte Alexandre Cabral Barbosa	Design of Millimeter Wave TransmitArrays using High Permittivity 3D-Printed Materials	English	Iscte	2025

2	Fábio Martinho Cardoso	Design of All-Metal Antennas for 5G and Satellite Applications	English	Iscte	2021
3	Jorge Pedro da Costa Mendes Teixeira	Desenvolvimento de lentes planares dielétricas para impressão 3D	Portuguese	Iscte	2016

Total Citations

Web of Science®	952
Scopus	1058

Publications

• Scientific Journals

- Scientific journal paper

1	Costa, T. S. da., Felício, J., Vala, M., Caldeirinha, R., Matos, S., Costa, J....de Maagt, P. (2025). Identifying optimal microwave frequencies to detect floating macroplastic litter using machine learning. International Journal of Microwave and Wireless Technologies. 17 (5), 804-818
2	Alexandropoulos, G. C., Jung, B. K., Gavriilidis, P., Matos, S., Loeser, L. H. W., Elesina, V....Kürner, T. (2025). Characterization of indoor reconfigurable intelligent surface-assisted channels at 304 GHz: Experimental measurements, challenges, and future directions. IEEE Vehicular Technology Magazine. 20 (3), 21-29 - Times Cited Web of Science®: 1 - Times Cited Scopus: 4 - Times Cited Google Scholar: 5
3	Gómez-Álvarez, A., Matos, S. A., Arrebola, M., Pino, M. R. & Fernandes, C. A. (2025). Compact beam-scanning reflectarray antenna with SLL reduction using in-plane panel translations. Applied Sciences. 15 (8)
4	Cai, Y., Matos, S. A., Mei, P., Felício, J. M., Fernandes, C. A., Costa, J....Zhang, S. (2025). Design of broadband low-profile transmitarrays at Ka-band with high-permittivity 3D-printed materials. IEEE Transactions on Antennas and Propagation. 73 (11), 8972-8980
5	Felício, J. M., Costa, T. So Da, Vala, M., Leonor, N., Costa, J. R., Marques, P....de Maagt, P. (2024). Feasibility of radar-based detection of floating macroplastics at microwave frequencies. IEEE Transactions on Antennas and Propagation. 72 (3), 2766-2779 - Times Cited Web of Science®: 9 - Times Cited Scopus: 9 - Times Cited Google Scholar: 10
6	de Fockert, A., Eleveld, M. A., Bakker, W., Felício, J. M., Costa, T. S., Vala, M....de Maagt, P. (2024). Assessing the detection of floating plastic litter with advanced remote sensing technologies in a hydrodynamic test facility. Scientific Reports. 14 (1) - Times Cited Web of Science®: 7 - Times Cited Scopus: 9 - Times Cited Google Scholar: 18

7	Vaquero, Á. F., Teixeira, J., Matos, S. A., Arrebola, M., Costa, J. R., Felício, J. M....Fonseca, N. J. G. (2023). Design of low-profile transmitarray antennas with wide mechanical beam steering at millimeter waves. IEEE Transactions on Antennas and Propagation. 71 (4), 3713-3718 - Times Cited Web of Science®: 46 - Times Cited Scopus: 51 - Times Cited Google Scholar: 53
8	Matos, S., Fonseca, N. J. G., João C. Serra, João M. Felício, Costa, J. R. & Fernandes, C. A. (2023). Generalized Risley Prism for Beam-Steering Transmit Arrays With Reduced Grating Lobes. IEEE Transactions on Antennas and Propagation. 71 (11), 8420-8428 - Times Cited Web of Science®: 15 - Times Cited Scopus: 21 - Times Cited Google Scholar: 22
9	Vaquero, A. V., Rodriguez Pino, M., Arrebola, M., Matos, S., Costa, J. R. & Fernandes, C. A. (2021). Evaluation of a dielectric-only transmitarray for generating multi-focusing near-field spots using a cluster of feeds in the Ka-Band. Sensors. 21 - Times Cited Web of Science®: 6 - Times Cited Scopus: 6 - Times Cited Google Scholar: 7
10	Naseri, P., Costa, J. R., Matos, S., Fernandes, C. A. & Hum, S. V. (2020). Equivalent circuit modeling to design a dual-band dual linear-to-circular polarizer surface. IEEE Transactions on Antennas and Propagation. 68 (7), 5730-5735 - Times Cited Web of Science®: 22 - Times Cited Scopus: 23 - Times Cited Google Scholar: 32
11	Matos, S., Teixeira, J., Costa, J. R., Fernandes, C. A., Nachabe, N., Luxey, C....Vizzari, J. -F. (2020). 3D-Printed transmit-array antenna for broadband backhaul 5G links at V band. IEEE Antennas and Wireless Propagation Letters. 19 (6), 977-981 - Times Cited Web of Science®: 16 - Times Cited Scopus: 17 - Times Cited Google Scholar: 21
12	Andre Barka, Matos, S., Costa, J. R., Fernandes, C. A. & Hassan Chreim (2020). Applying Massively Parallel Computing to Multiscale Ka Dual-Band Transmit-Array Analysis Using FETI-2LM. IEEE Journal on Multiscale and Multiphysics Computational Techniques. 5, 235-244 - Times Cited Web of Science®: 6 - Times Cited Scopus: 8 - Times Cited Google Scholar: 13
13	Vaquero, A. V., Rodriguez Pino, M., Arrebola, M., Matos, S., Costa, J. R. & Fernandes, C. A. (2020). Bessel beam generation using dielectric planar lenses at millimeter frequencies. IEEE Access. 8, 216185-216196 - Times Cited Web of Science®: 10 - Times Cited Scopus: 12 - Times Cited Google Scholar: 16
14	Parinaz Naseri, Matos, S., Lima, E. B., Costa, J. R., Fernandes, C. A. & Fonseca, N. J. G. (2019). Efficient Evaluation of Gradient Transmit-Arrays Through an Equivalent Dispersive Dielectric Description. IEEE Transactions on Antennas and Propagation. 67 (9), 5997-6007 - Times Cited Web of Science®: 5 - Times Cited Scopus: 4 - Times Cited Google Scholar: 7

15	Naseri, P. , Matos, S., Costa, J. R., Fernandes, C. A. & Fonseca, N. J. G. (2018). Dual-band dual linear to circular polarization converter in transmission mode-application to K/Ka-band satellite communications. IEEE Transactions on Antennas and Propagation. 66 (12), 7128-7137 - Times Cited Web of Science®: 215 - Times Cited Scopus: 238 - Times Cited Google Scholar: 280
16	Cruz, C. C., Fernandes, C. A., Matos, S. A. & Costa, J. R. (2018). Synthesis of shaped-beam radiation patterns at millimeter-waves using transmit arrays. IEEE Transactions on Antennas and Propagation. 66 (8), 4017-4024 - Times Cited Web of Science®: 24 - Times Cited Scopus: 25 - Times Cited Google Scholar: 37
17	Naseri, P., Matos, S. A., Costa, J. R. & Fernandes, C. A. (2018). Phase-delay versus phase-rotation cells for circular polarization transmit arrays - application to Satellite Ka-Band Beam steering. IEEE Transactions on Antennas and Propagation. 66 (3), 1236-1247 - Times Cited Web of Science®: 57 - Times Cited Scopus: 55 - Times Cited Google Scholar: 72
18	Bisognin, A., Arboleya, A., Luxey, C., Gianesello, F., Gloria, D., Matos, S. A....Fernandes, C. A. (2017). Three-dimensional printed ABS plastic peanut-lens with integrated ball grid array module for high-data-rate communications in F-band. IET Microwaves, Antennas and Propagation. 11 (14), 2021-2026 - Times Cited Web of Science®: 1 - Times Cited Scopus: 1 - Times Cited Google Scholar: 2
19	Matos, S., Lima, E. B., Silva, J. S., Costa, J. R., Fernandes, C. A., Fonseca, N. J. G....Mosig, J. R. (2017). High gain dual-band beam-steering transmit array for Satcom terminals at Ka-band. IEEE Transactions on Antennas and Propagation. 65 (7), 3528-3539 - Times Cited Web of Science®: 131 - Times Cited Scopus: 134 - Times Cited Google Scholar: 167
20	Cruz, C. C., Costa, J. R., Fernandes, C. A. & Matos, S. (2017). Focal-plane multibeam dual-band dielectric lens for ka-band. IEEE Antennas and Wireless Propagation Letters. 16, 432-436 - Times Cited Web of Science®: 11 - Times Cited Scopus: 11 - Times Cited Google Scholar: 12
21	Prudêncio, F. R., Matos, S. A. & Paiva, C. R. (2015). Asymmetric band diagrams in photonic crystals with a spontaneous nonreciprocal response. Physical Review A - Atomic, Molecular, and Optical Physics. 91 (6) - Times Cited Web of Science®: 20 - Times Cited Scopus: 20 - Times Cited Google Scholar: 25
22	Lima, E. B., Matos, S., Costa, J. R., Fernandes, C. A. & Fonseca, N. J. G. (2015). Circular polarization wide-angle beam steering at Ka-Band by in-plane translation of a plate lens antenna. IEEE Transactions on Antennas and Propagation. 63 (12), 5443-5455 - Times Cited Web of Science®: 197 - Times Cited Scopus: 203 - Times Cited Google Scholar: 250

23	Prudêncio, F., Matos, S. & Paiva, C. (2014). A geometrical approach of duality transformations for tellegen media. IEEE Transactions on Microwave Theory and Techniques. 62 (7), 1417-1428 - Times Cited Web of Science®: 13 - Times Cited Scopus: 13 - Times Cited Google Scholar: 19
24	Prudêncio, F., Matos, S. & Paiva, C. (2014). Analysis of Waveguides Containing EMCs (electromagnetic conductors) or PEMCs (perfect electromagnetic conductors). Photonics and Nanostructures - Fundamentals and Applications. 12 (5), 437-446 - Times Cited Web of Science®: 4 - Times Cited Scopus: 4 - Times Cited Google Scholar: 6
25	Prudêncio, F., Matos, S. & Paiva, C. (2014). Exact image method for radiation problems in stratified isorefractive tellegen media. IEEE Transactions on Antennas and Propagation. 62 (9), 4637 -4646 - Times Cited Web of Science®: 9 - Times Cited Scopus: 9 - Times Cited Google Scholar: 13
26	Paiva, C. & Matos, S. (2012). Minkowskian Isotropic Media and the Perfect Electromagnetic Conductor. IEEE Transactions on Antennas and Propagation. 60 (7), 3231-3245 - Times Cited Web of Science®: 15 - Times Cited Scopus: 16 - Times Cited Google Scholar: 19
27	Matos, S., Paiva, C. & Barbosa, A. (2010). Anisotropy done right: a geometric algebra approach. European Physical Journal - Applied Physics. 49 (3), 33006-33006 - Times Cited Web of Science®: 2 - Times Cited Scopus: 3 - Times Cited Google Scholar: 10
28	Canto, J. R., Matos, S. A., Paiva, C. R. & Barbosa, A. M. (2008). Effect of losses in a layered structure containing DPS and DNG media. PIERS Online. 4 (5), 546-550 - Times Cited Google Scholar: 23
29	Matos, S. A., Canto, J. R., Paiva, C. R. & Barbosa, A. M. (2008). Complex aberration effect in moving dispersive DNG media: a spacetime algebra approach. PIERS Online. 4 (6), 611-614 - Times Cited Google Scholar: 6
30	Matos, S. A., Paiva, C. R. & Barbosa, A. M. (2008). Surface and proper leaky-modes in a lossless grounded pseudochiral omega slab. Microwave and Optical Technology Letters. 50 (3), 814-818 - Times Cited Web of Science®: 6 - Times Cited Scopus: 7 - Times Cited Google Scholar: 9
31	Matos, S. A., Ribeiro, M. A. & Paiva, C. R. (2007). Anisotropy without tensors: a novel approach using geometric algebra. Optics Express. 15 (23), 15175-15186 - Times Cited Web of Science®: 11 - Times Cited Scopus: 14 - Times Cited Google Scholar: 25
32	Matos, S. A., Paiva, C. R., Canto, J. R. & Barbosa, A. M. (2006). New physical effects at an air-pseudochiral omega interface: surface polaritons and proper leaky-modes. Microwave and Optical Technology Letters. 48 (12), 2517-2520 - Times Cited Web of Science®: 2 - Times Cited Scopus: 2 - Times Cited Google Scholar: 4

- Editorial

1	Ping Jack Soh, Duy Tung Phan, Qi Luo, Matos, S., Antonio Clemente & Marco Di Renzo (2025). Guest Editorial: Special Cluster on Reconfigurable and Multifunctional Electromagnetic Surfaces for Emerging Wireless Systems. IEEE Antennas and Wireless Propagation Letters. 24 (11), 4287-4292

• Books and Book Chapters

- Book author

1	Matos, S. & Costa, J. R. (2017). Manual de Eletromagnetismo . ISCTE-IUL.
2	Matos, S. & Costa, J. R. (2014). Manual de Propagação e Radiação de Ondas Eletromagnéticas. ISCTE-IUL.
3	Canto, Joao R., Matos, S., Paiva, C., Barbosa, A. & Ieee, (2008). Isotropic-Uniaxial Interfaces for Anisotropic Media with Biaxial Electric and Magnetic Functions: A New Approach with Geometric Algebra. - Times Cited Google Scholar: 1

• Conferences/Workshops and Talks

- Publication in conference proceedings

1	Matos, S., Parinaz Naseri, João M. Felício, Costa, J. R., Fernandes, C. A. & Fonseca, N. J. G. (2025). K/Ka Dual-Band Dual-Polarization Feed System for Compact Transmit-Array SOTM Antennas. In 2025 IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (APWC). (pp. 189-193). Palermo, Italy: IEEE.
2	Mário Vala, João M. Felício, Tomás Soares Da Costa, Nuno Leonor, Costa, J. R., Paulo Marques...Peter de Maagt (2025). Medium-Scale Measurement Campaign for Floating Macroplastic Detection in a Realistic Environment at X-Band Frequencies. In 2025 19th European Conference on Antennas and Propagation (EuCAP). (pp. 1-5). Stockholm, Sweden: IEEE.
3	Alvaro F. Vaquero, Matos, S., Arraiano A., M. Arrebola, Felício, J., Costa, J. R....Fernandes, C. A. (2025). Evaluation of the Beam-Scanning Performance of Curved Transmitarrays,. In European Conference on Antennas and Propagation - EuCap.
4	Tomás Soares Da Costa, João M. Felício, Matos, S., Costa, J. R., Fernandes, C. A. & Fonseca, N. J. G. (2025). Monitoring Plastic Accumulations in a River Environment Using Machine Learning on Sentinel-1 SAR Data. In 2025 19th European Conference on Antennas and Propagation (EuCAP). (pp. 1-5). Stockholm, Sweden: IEEE. - Times Cited Scopus: 1 - Times Cited Google Scholar: 1
5	Matos, S., Fonseca, N. J. G., Felício, J., Fernandes, C. A. & Costa, J. R. (2025). Ultra-Compact Risley-Prism Design with a 3D-Printed Transmit-Array Fed by a Radial Line Slot Antenna. In European Conference on Antennas and Propagation - EuCap.
6	Lorenz H.W. Loeser, Matos, S. & Thomas Kürner (2025). Channel Measurements Involving Passive RIS at 300 GHz. In 2025 19th European Conference on Antennas and Propagation (EuCAP). (pp. 1-5). Stockholm, Sweden: IEEE. - Times Cited Scopus: 2 - Times Cited Google Scholar: 7

7	Cardoso, F. M., Matos, S., Luis Manuel Pessoa & George C. Alexandropoulos (2025). Indoor Channel Characterization With Extremely Large Reconfigurable Intelligent Surfaces at 300 GHz. In 2025 19th European Conference on Antennas and Propagation (EuCAP). (pp. 1-5). Stockholm, Sweden: IEEE. - Times Cited Google Scholar: 1
8	Matos, S., Fonseca, N. J. G., Felício, J., Fernandes, C. A. & Costa, J. R. (2025). Wideband power divider design based on miniaturized ridge waveguides. In European Conference on Antennas and Propagation - EuCap.
9	Bo Kum Jung, Varvara V. Elesina, Matos, S., Orestis Koutsos, Antonio Clemente, Thomas Kürner...Raffaele D'Errico (2025). T-RIS and R-RIS Experimental Characterization in the Sub-THz Band. In 2025 19th European Conference on Antennas and Propagation (EuCAP). (pp. 1-5). Stockholm, Sweden: IEEE. - Times Cited Google Scholar: 3
10	Matos, S., J. Corcoles, Felício, J., Costa, J. R., Fonseca, N. J. G. & Fernandes, C. A. (2025). Dual Band Risley Prism Antenna for Satellite-On-The-Move Applications. In European Conference on Antennas and Propagation - EuCap.
11	Matos, S., Yihan Ma, Qi Luo, Deuermeier, J., Lucci, L., Gavriilidis, P....Alexandropoulos, G. (2024). Reconfigurable intelligent surfaces for THz: Hardware impairments and switching technologies. In Proceedings of the International Conference on Electromagnetics in Advanced Applications, ICEAA. (pp. 415-420). Lisbon, Portugal: IEEE. - Times Cited Web of Science®: 6 - Times Cited Scopus: 13 - Times Cited Google Scholar: 25
12	Matos, S., Felício, J. M., Costa, J. R., Fernandes, C. A. & Fonseca, N. J. G. (2024). Multibeam antenna for wide-angle 96-beam coverage at Ka-band using a multifocal transmit-array. In 2024 18th European Conference on Antennas and Propagation (EuCAP). Glasgow, United Kingdom: IEEE.
13	Cardoso, F., Matos, S., Pessoa, L. M., Clemente, A., Costa, J. R., Fernandes, C. A....Felício, J. M. (2024). Improved performance of a 1-Bit RIS by using two switches per bit implementation. In 2024 18th European Conference on Antennas and Propagation (EuCAP). Glasgow, United Kingdom: IEEE. - Times Cited Scopus: 1 - Times Cited Google Scholar: 1
14	Jung, B. K., Elesina, V. V., Matos, S., D'Errico, R. & Kürner, T. (2024). Initial assessment of THz indoor channel with passive reflective intelligent surfaces. In ISAP 2024 - International Symposium on Antennas and Propagation. Incheon, Korea, Republic of: IEEE. - Times Cited Scopus: 2 - Times Cited Google Scholar: 5
15	Matos, S., Fonseca, N. J. G., Serra, J., Felício, J. M., Costa, J. R. & Fernandes, C. A. (2024). Novel Risley prism design approach with improved side lobe levels using multi-layer transmit-arrays. In 2024 18th European Conference on Antennas and Propagation (EuCAP). Glasgow, United Kingdom: IEEE.
16	Costa, T., Felício, J. M., Vala, M., Leonor, N., Costa, J. R., Marques, P....Maagt, P. (2024). Feature selection for identifying optimal microwave frequencies to detect floating macroplastic litter in C and X bands. In 2024 18th European Conference on Antennas and Propagation (EuCAP). Glasgow, United Kingdom: IEEE. - Times Cited Web of Science®: 4 - Times Cited Scopus: 4 - Times Cited Google Scholar: 5

17	Vala, M., Felício, J. M., Costa, T. S., Leonor, N., Costa, J. R., Marques, P....Maagt, P. (2024). Small-scale passive millimetre-wave imaging measurements for marine litter detection at w-band. In 2024 18th European Conference on Antennas and Propagation (EuCAP). Glasgow, United Kingdom: IEEE. - Times Cited Scopus: 1 - Times Cited Google Scholar: 1
18	Alexandropoulos, G., Clemente, A., Matos, S., Husbands, R., Ahearne, S., Luo, Q....Pessoa, L. M. (2024). Reconfigurable intelligent surfaces for THz: Hardware design and signal processing challenges. In 2024 18th European Conference on Antennas and Propagation (EuCAP). Glasgow, United Kingdom: IEEE. - Times Cited Web of Science®: 8 - Times Cited Scopus: 9 - Times Cited Google Scholar: 24
19	Felício, J. M., Motta-Cruz, E., Costa, J. R., Matos, S. & Fernandes, C. A. (2024). Study of environmentally-friendly radomes using cork-rubber composites for 5G backhaul links at E-band. In 2024 18th European Conference on Antennas and Propagation (EuCAP). (pp. 1-4). Glasgow, United Kingdom: IEEE.
20	Matos, S. A., Fonseca, N. J. G., Serra, J., Felício, J. M., Costa, J. R. & Femandes, C. (2024). Revisiting Risley prism transmit-array antennas using a novel co-design phase correction approach. In 2024 IEEE International Symposium on Antennas and Propagation and INC/USNCURSI Radio Science Meeting (AP-S/INC-USNC-URSI). (pp. 561-562). Firenze, Italy: IEEE.
21	Córcoles, J., Matos, S., Camacho, M, Felício, J., Costa, J. R., Fernandes, C. A....Boix, R (2024). Efficient optimization-assisted full-wave MoM unit-cell design for dual-band transmitarrays. In 2024 18th European Conference on Antennas and Propagation (EuCAP). (pp. 3033-3037). Glasgow: IEEE.
22	Matos, S., Felício, J., Costa, J. R., Fernandes, C. A. & Fonseca, N. (2023). Dielectric versus patch-based implementations of Risley Prism transmit-arrays in Ka-band. In EuCAP 2023, Proceedings. Florença: IEEE. - Times Cited Google Scholar: 2
23	Vala, M., Felício, J. M., Costa, T. S. da., Leonor, N., Costa, J. R., Marques, P....de Maagt, P. (2023). On the feasibility of using Passive mm-Wave Imaging for marine litter detection at the w-band. In 2023 17th European Conference on Antennas and Propagation (EuCAP) . Florence, Italy: IEEE. - Times Cited Web of Science®: 4 - Times Cited Scopus: 5 - Times Cited Google Scholar: 5
24	Matos, S., Vaquero, Á. F. , Arrebola, M., Costa, J. R., Felício, J., Fernandes, C....Fonseca, N. J. G. (2023). Achieving wide-angle mechanical beam steering in Ka-band with low-profile transmit-array antennas. In 2023 17th European Conference on Antennas and Propagation (EuCAP) . Florence, Italy: IEEE. - Times Cited Web of Science®: 1 - Times Cited Scopus: 1 - Times Cited Google Scholar: 2
25	Costa, T. S. da., Felício, J. M., Vala, M., Leonor, N., Costa, J. R., Marques, P....de Maagt, P. (2023). Detection of low permittivity floating plastic sheets at microwave frequencies. In 2023 17th European Conference on Antennas and Propagation (EuCAP). Florence, Italy: IEEE. - Times Cited Web of Science®: 3 - Times Cited Scopus: 5 - Times Cited Google Scholar: 6
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50	Matos, S., Paiva, C. & Barbosa, A. (2009). Optic axes of general anisotropic media: a geometric algebra perspective. Conf. on Telecommunications - ConfTele.

51	Matos, S., Paiva, C. & Barbosa, A. (2009). A spacetime algebra approach to moving bi-isotropic media. IEEE AP-S/URSI International Symp.
52	Matos, S., Paiva, C. & Barbosa, A. (2008). Electromagnetics of complex media using geometric algebra. VI IBERIAN MEETING ON COMPUTATIONAL ELECTROMAGNETICS .
53	Matos, S., Canto, J., Paiva, C. & Barbosa, A. (2008). New insights into anisotropy and bianisotropy using geometric algebra. Metamorphose International Congress on Advanced Electromagnetic Materials in Microwaves and Optics - Metamaterials.
54	Matos, S., Canto, J., Paiva, C. & Barbosa, A. (2008). Complex aberration effect in moving dispersive DNG media: a spacetime algebra approach. Progress in Electromagnetics Research Symp. - PIERS.
55	Matos, S., Canto, J., Paiva, C. & Barbosa, A. (2008). A geometric algebra approach to bianisotropy. NATO Advanced Research Workshop: Metamaterials for Secure Information and Communication Technologies - ARW.
56	Matos, S., Canto, J., Paiva, C. & Barbosa, A. (2008). A New Framework Based on Geometric Algebra for the Analysis of Materials and Metamaterials with Electric and Magnetic Anisotrop. IEEE AP-S/URSI International Symp.
57	Matos, S., Paiva, C. & Barbosa, A. (2007). A coordinate-free approach to a pseudochiral omega medium. Metamorphose International Congress on Advanced Electromagnetic Materials in Microwaves and Optics – Metamaterials.
58	Matos, S., Paiva, C. & Barbosa, A. (2007). New approach on the electromagnetics of a moving chiral media. URSI International Symp. in Electromagnetic Theory.
59	Matos, S., Paiva, C., Canto, J. & Barbosa, A. (2007). Complex Waves in a Grounded Bianisotropic Slab with Omega Inclusions. Conf. on Telecommunications - ConfTele.
60	Matos, S., Paiva, C. & Barbosa, A. (2007). Effect of dispersion on a moving DNG medium. Encuentro Ibérico de Electromagnetismo Computacional - EIEC.
61	Matos, S., Paiva, C., Canto, J. & Barbosa, A. (2006). Guided electromagnetic wave propagation at an air-pseudochiral omega interface. Workshop on metamaterials and Special materials for Electromagnetic Applications and TLC.

• Other Publications

- Other publications

1	Matos, S., Costa, J. R. & C. A. Fernandes (2012). Designing planar lenses using transformation optics. 2nd COST VISTA Workshop.
2	Matos, S., Paiva, C. & Barbosa, A. (2011). Biaxial Media Beyond Electric Anisotropy. Encuentro Ibérico de Electromagnetismo Computacional.

Research Projects

Project Title	Role in Project	Partners	Period
Inovação em Sensores e Comunicações para a Sociedade	Local Coordinator	IT - Leader (Portugal)	2024 - 2027
Increased Resolution Microwave Imaging using Superlens	Local Coordinator	IT-Iscte, IT - Leader (Portugal)	2023 - 2024
Terahertz Reconfigurable Metasurfaces for ultra-high rate wireless communications	Local Coordinator	IT-Iscte, INESC TEC - Leader (Portugal), University of Athens - (Greece), University of Hertfordshire - (Afghanistan), University of Oulu - (Afghanistan), Intracom Telecom - (Afghanistan), IT - (Portugal)	2023 - 2026
Satellite-based microwave remote sensing for marine litter mapping	Local Coordinator	IT-Iscte, IT - (Portugal)	2021 - 2024
New Space Portugal	Researcher	IT - Leader (Portugal)	2021 - 2025
Future communications with higher-symmetric engineered artificial materials	Local Coordinator	IT-Iscte	2019 - 2023
Additive Antenna Manufacturing	PhD Student	IT-Iscte	2018 - 2021
Compact Lens-Based Mechanically Steered Ka-Band user Terminal Antenna	Researcher	IT-Iscte	2013 - 2018
Development of a European-based Collaborative Network to Accelerate Technological, Clinical and Commercialisation Progress in the Area of Medical Microwave Imaging	Researcher	IT-Iscte	2013 - 2017
COST IC1102 - Versatile, Integrated and Signal-aware Technologies for Antennas	Researcher	IT-Iscte	2011 - 2015

Academic Management Positions

Coordenador de ECTS (2025 - 2028)

Unit/Area: Department of Information Science and Technology

Membro (2025 - 2028)
Unit/Area: Comissão Científica

Coordenador do 2º Ano (2023 - 2025)
Unit/Area: Bachelor Degree in Telecommunications and Computer Engineering

Coordenador do 2º Ano (2021 - 2023)
Unit/Area: Bachelor Degree in Telecommunications and Computer Engineering

Coordenador de ECTS (2020 - 2022)
Unit/Area: Department of Information Science and Technology

Coordenador do 2º Ano (2019 - 2021)
Unit/Area: Bachelor Degree in Telecommunications and Computer Engineering

Coordenador de ECTS (2017 - 2020)
Unit/Area: Department of Information Science and Technology

Awards

3rd plane on the iWAT2023 Best Paper Award contest (2023)

Nominee (Top 5) of the Best Theory and Design Antenna Paper Award of EuCAP2023 (2023)

IEEE Transactions on Antennas and Propagation Society - Top 200 reviewers for the period of June 1, 2022, through May 31, 2023 (2023)

Co-supervisor of PhD Thesis distinguished with the price “Professor Abreu Faro” for the biennium 2013/2014 (Instituto Superior Técnico, University of Lisbon) (2015)

Co-author of communication distinguished with the Young Scientist Award' of the 31st URSI General Assembly and Scientific Symposium (2014)

Co-author of communication distinguished with 3rd place in the Student Paper Competition - 7th International Congress on Advanced Electromagnetic (2013)

Student Paper Contest Honorable Mention of 2009 IEEE International Symposium on Antennas and Propagation (2009)

Honorable mention in the Best Student Paper Award (2009)

Professional Associations

Senior Member of Institute of Electrical and Electronics Engineers (IEEE) (Since 2014)

Organization/Coordination of Events

Type of Organization/Coordination	Event Title	Organizer	Year
Member of scientific event's organizing committee	Scientific meeting of COST Action 18223 (Symat)	ISCTE-IUL	2023
Member of scientific event's organizing committee	Encuentro Ibérico Computacional	Instituto de Telecomunicações	2011

Products

Product Type	Product Title	Detailed Description	Year
Patent	Waveguide Power Divider (pending)	The disclosed waveguide power divider device comprises a standard double-ridged waveguide, a tapered double-ridged waveguide, a quadri-ridged septum, and two output adjacent double-ridged waveguides, all fitting in the same cross section envelope.	2023
Patent	Generalized Risley Prism for Beam-Steering Transmit-Arrays with Low Grating Lobes (pending)	This patent protects a steerable beam antenna for microwave frequencies based on the mechanical Risley rotation principle, but with a new design strategy to significantly improve the Side Lobe level performance. It comprises: 1) a feeding structure having at least one part mounted for rotation about a longitudinal axis of the antenna, capable of implementing a prescribed phase shift law. An embodiment of this part can be a metasurface, illuminated by a stationary horn antenna, as done in the developed prototype. 2) a stacked metasurface composed of sub-wavelength unit-cells capable of rotation about said longitudinal axis, with its aperture orthogonal to said longitudinal axis.	2023