Abounasr Jamal

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Education

Universitat Politècnica de Catalunya (UPC) Nov 2023 - Present
PhD Electronics Engineering
Minors: Developing high-frequency flexible and printable RF sensors for breathing detection and wearable healthcare applications. Specializing in microwave sensing, textile-integrated sensors, and non-invasive monitoring. Utilizing CST, HFSS, ADS, and Matlab for sensor optimization. Advancing wireless health monitoring through innovative sensor designs.
Courses: Ethics for Engineers, Research and Innovators, Visibility and impact indicators

Abdelmalek Essaâdi University Oct 2022 - Present
PhD Electronic and Telecommunications
Minors: This research enhances planar SIW structures using optimization algorithms for millimeter-wave applications. It integrates MATLAB-based optimization with CST Studio API, automating parameter tuning. Antenna fabrication and VNA validation ensure accuracy. The study improves wireless communication, sensing, and SIW-based systems, advancing high-frequency RF technologies.
Courses: Advanced MIMO Radar Processing, Introduction and Awareness to Cybersecurity,

Abdelmalek Essaâdi University Sep 2021 - Jun 2022
Master Telecommunications

Ibn Zorh University Sep 2016 - Jul 2019
Bachelor Physics Sciences (Electronic)

Projects

TELEBREATH – Textile-Based Sensors for Respiratory Disease Monitoring Dec 2022 - Present

Developing electronic textile sensors for respiratory disease monitoring and early disease detection. Focused on asthma, COPD, and pulmonary diseases, using wearable RF and textile sensor technology for minimally invasive health monitoring.

ETEXHEALTH – Advanced E-Textile Sensors for Health Monitoring Sep 2022 - Present

Developing e-textile sensors for biometric monitoring and disease detection. Focused on low-frequency resistive/capacitive sensors and high-frequency RFID and antenna sensors for non-invasive health applications. Funded by Agencia Estatal de Investigación.

Awards

Joan Oró FI Predoctoral Grant Apr 2025
Agencia de Gestión de Ayudas Universitarias y de Investigación (AGAUR)

Awarded the Joan Oró FI Predoctoral Grant for doctoral research at UPC. Funds three years of study, covering tuition and supporting training activities, international research stays, and professional development in high-frequency flexible sensors and RF-based healthcare applications.

Core Skills

Computer Skills: CST Microwave Studio, HFSS, ADS, MATLAB, Arduino IDE, Quartus II; FPGA Programming, Proteus, Cisco Packet Tracer, Microsoft office, Latex, OriginLab.
RF & Measurement Equipment: Vector Network Analyzer (VNA), Anechoic Chamber, RF Power Meter, Oscilloscope, NOVA inkjet printer, Singer Embroidery Machine; Dycometal Technology Machine, BIOPAC System; Inc.

Languages

Arabic (Native), French (Professional Proficiency), English (Professional Proficiency)

Publications

Flexible Body-Integrated Breathing Monitoring System Based on Near-Field Coupling Printed Sensor
Measurement
Under revision | Journal article
Contributors: Jamal Abounasr; Mariam El Gharbi; Raúl Fernández García; Ignacio Gil

A High-Sensitivity Inkjet-Printed Flexible Resonator for Monitoring Dielectric Changes in Meat
Sensors
2025-02-22 | Journal article
DOI: 10.3390/s25051338
Contributors: Jamal Abounasr; Mariam El Gharbi; Raúl Fernández García; Ignacio Gil

Design and Fabrication of a Biocompatible Antenna for Wearable Technologies
IEEE Journal
2025-05-25 | Conference
DOI: 10.23919/EuCAP63536.2025.10999289
Contributors: Jamal Abounasr; Mariam El Gharbi; Raúl Fernández García; Ignacio Gil

A Smart Belt With Embroidered Antenna-Based Sensor for Real-Time Respiratory Monitoring
IEEE Sensors Journal
2025-10-01 | Journal article
DOI: 10.1109/JSEN.2025.3594530
Contributors: Mariam El Gharbi; Jamal Abounasr; Raúl Fernández-García; Ignacio Gi

Capacitively Coupled CSRR and H-Slot UHF RFID Antenna for Wireless Glucose Concentration Monitoring
Sensors
2025-09-10 | Journal article
DOI: 10.3390/s25185651
Contributors: Tauseef Hussain; Jamal Abounasr; Ignacio Gil; Raúl Fernández-García

Study of Wash-Induced Performance Variability in Embroidered Antenna Sensors for Physiological Monitoring
Electronics
2025-05-21 | Journal article
DOI: 10.3390/electronics14102084
Contributors: Mariam El Gharbi; Jamal Abounasr; Raúl Fernández-García; Ignacio Gil

Textile Stretchable Antenna-Based Sensor for Breathing Monitoring
IEEE Sensors Journal
2024-12-15 | Journal article

DOI: 10.1109/JSEN.2024.3485472

Contributors: Mariam El Gharbi; Jamal Abounasr; Raúl Fernández García; Ignacio Gil Gali

Novel Approaches for Developing Wideband H-Plane Horn Antennas

2024 | Book chapter

DOI: 10.1007/978-3-031-54674-7_34

Contributors: Jamal Abounasr; Dahbi El Khamlichi; Hanaa El Moudden; Naima Amar Touhami