

Bader M. Fetouri, Ph.D

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PROFESSIONAL EXPERIENCE

Lillybelle

Technical Sales Engineer and Account Managed

October 2024—Present 2024, Paris, France

- Managed mobile networks operators accounts, optimizing product utilization and maximizing customer satisfaction.
- Provided technical support to sales engineers and customers. Advised customers on best solutions to their needs.
- Visited clients and prospects, maintained relationships through lunches and phone calls.
- Provided technical training to customers in RF exposure mitigation, propagation models, and telecommunications in general.
- Increased sales revenue by implementing cross-sell and upsell strategies for RF-EMF exposure clients.

Lillybelle

Service Delivery Manager – Senior Telecommunications Engineer

March 2024—October 2024, Paris, France

- Lillybelle is a telecommunications service company that provides QoS/QoE drive test tools, and is the official distributor of Narda products in France and West Africa. Lillybelle is also the official distributor of IXUS, RF safety compliance software.
- Worked as a service delivery manager in RF exposure evaluation to unblock 5G rollouts paused because of uncompliant RF exposure boundaries. Managed a team of one RF engineer and two 3D designers.
- Implemented solutions to reduce RF exposure evaluation time and satisfy the clients' needs.
- Results: unblocked 115 radio deployments of 5G sites previously blocked due to uncompliant RF exposure boundaries.
- Provided presales support for the RF exposure evaluation service proposed by Lillybelle.
- Worked as RF exposure technical expert to advise Lillybelle's clients for Narda products and IXUS.

Amaris Consulting – Bouygues Telecom

Consultant, Study Lead Engineer, and Research Specialist

October 2021—March 2024, Paris, France

- Worked as RF exposure studies lead, at Bouygues Telecom's regulatory affairs department.
- Studied ICNIRP guidelines (1998 and 2020), IEC 2017 and 2022, IEEE C951-2019.
- Assessed public's and workers' exposure to RF antennas (2G to 5G) using simulations (IXUS and EMF Visual). Results: unblocked 45 sites deployments by proposing adjustments to make them compliant with RF exposure limits. Worked as technical referent when Bouygues Telecom decided to subcontract the RF exposure assessment work to Lillybelle.
- Studied the impact of field averaging in reducing compliance boundaries of multi-band base stations (2G to 5G).
- Evaluated near-field exposure to multi-band base stations (2G to 5G) using Excel.
- Performed EMF measurements near mobile base stations to assess workers exposure to 4G emissions with extrapolation to maximum power. Performed EMF measurements to better understand the power control features of 5G Ericsson base stations. Measurement equipment: Narda NBM-520 and SRM-3006.
- Published 2 conference papers, worked as a reviewer and session chair for 2 conferences (MISTA-CON 2023, SCC2023)

Télécom Paris – Institut Polytechnique de Paris

PhD in applied physics

November 2017—June 2021, Paris, France

- Workers' exposure to FM antennas in radio towers.
- Electromagnetic fields modelling using CST and MATLAB, dosimetry simulations using the FDTD method on linux.
- FM sources models for FDTD simulations. Specific absorption rate (SAR) simulations on homogenized human models.
- Results: developed a new methodology for near-field exposure assessment, proposed machine learning models to estimate SAR.
- Publications: BioEM2019 conference, URSI GASS 2020 conference, Bioelectromagnetics journal article (Wiley).

Nokia

Telecommunications engineer

September 2015—August 2017, Paris, France

- Worked in the Mobile Networks CTO Business Unit in RF Exposure Mitigation.
- Analyzed exposure perimeters for 4G and 5G Nokia equipment, wrote compliance reports for internal use and Nokia's clients.
- Analyzed uplink and downlink electromagnetic fields exposure to LTE/4G Small Cells, processed data using Excel & VBA.
- Analyzed indoor and outdoor exposure to 4G and 5G equipments using 3GPP pathloss models.
- Publication: co-authored EuCAP'17 conference article studying uplink exposure. DOI: 10.23919/EuCAP.2017.7928743.

CNRS –French National Centre for Scientific Research

Instrumentation technician

April 2014—July 2014, Paris, France

- Worked on a Miniaturized Gamma Imager for Cancer Surgery (MAGICS).
- MAGICS input voltage depended on local temperature, hence the camera needed a suitable temperature sensor
- Designed a PCB to test several sensors, using Arduino and C++. Used LabVIEW for the test bench.
- Result: recommended the most suitable sensor for MAGICS.

EDUCATION

Télécom Paris – Institut Polytechnique de Paris

PhD in applied physics

November 2017—June 2021, Paris, France

- Thesis: Exposure Assessment in Near-Field: Methodology and Application in FM Frequencies for Occupational Exposure.
- Followed courses in electromagnetic fields modelling, scientific writing, statistics, machine learning.

Télécom Paris – Institut Polytechnique de Paris

Engineering diploma (M.Sc) in Communication Systems

September 2014—July 2017, Paris, France

M.Sc in Telecom Antennas and Components

- Double degree.
- Communication systems, antennas, propagation, radio coverage, digital communications.
- Electromagnetic fields simulation and modelling, terahertz semiconductors, RF electronic circuits.
- Thesis: Small cells and 5G massive MIMO exposure indicators.

Cachan Institute of Technology - IUT de Cachan

Associate's Degree in Electrical Engineering and Industrial Data Processing

September 2012—July 2014, Paris, France

- Analog and digital electronics, embedded systems, digital systems implementation and architecture (VHDL).

INTERESTS

French Debating Association

September 2014—March 2017, Paris, France

- Member of the English debating team at Telecom Paris.
- Debated in the French Debating Association championship from 2015 to 2017 (www.frenchdebatingassociation.fr).

Other interests

- Photography and video editing. Swimming. Working out. Reading.

LANGUAGES

• French, English (TOEFL: 109/120), Arabic: trilingual • Spanish: beginner • Lived in Libya, Tunisia, France, Belgium, Netherlands.

SKILLS

• MATLAB • IXUS • EMF Visual • CST • Excel VBA • SketchUp • LabVIEW • Radiofrequencies • Scientific writing.

PUBLICATIONS

Journal

- Fetouri, B. M., Azzi, S., Ouberehil, A., Briend, P., De Doncker, P., & Wiart, J. (2022). Near - Field Exposure in FM Frequencies: New Methodology and Estimation Formulas. Bioelectromagnetics, 43(3), 182-192.

Doctoral dissertation

- Fetouri, B. M. (2021). Exposure assessment in near-field: methodology and application in FM frequencies for occupational exposure (Doctoral dissertation, Institut polytechnique de Paris).

Conferences

- Fetouri, B. M. (2023, December). Field Strength Averaging Schemes Performance Quantification in the Near-Field for FM Frequencies. In 2023 IEEE Third International Conference on Signal, Control and Communication (SCC) (pp. 01-05). IEEE.
- Fetouri, B. M. (2023, May). Near-field Generation and Control in Radio Towers for DAB frequencies. In 2023 IEEE 3rd International Maghreb Meeting of the Conference on Sciences and Techniques of Automatic Control and Computer Engineering (MI-STA) (pp. 261-265). IEEE.
- Fetouri, B., Ouberehil, A., De Doncker, P., & Wiart, J. (2021). Near-field Occupational Exposure in FM Transmission Pylons. In 2020 XXXIIIrd General Assembly and Scientific Symposium of the International Union of Radio Science (pp. 1-3). IEEE.
- Fetouri, B., Ouberehil, A., De Doncker, P., & Wiart, J. J. (2019). Near-field relationship between maximum local SAR and maximum field intensity in FM frequencies. In Proc. of the BioEM International Conference.

As Co-author

- Mazloun, T., Fetouri, B., Elia, N., Conil, E., Grangeat, C., & Wiart, J. (2017, March). Assessment of RF human exposure to LTE small-and macro-cells: UL case. In 2017 11th European Conference on Antennas and Propagation (EUCAP) (pp. 1592-1593). IEEE.