FACULTY FULL NAME: Lola El Sahmarany

POSITION: Assistant professor

Personal Data

Nationality | French

Date of Birth | 01/01/1987

Department | Biomedical Engineering

Official UoD Email | lelsahmarany@iau.edu.sa

Office Phone No. |

Language Proficiency

Language	Read	Write	Speak
Arabic	✓	✓	✓
English	✓	✓	✓
French	✓	✓	✓

Academic Qualifications (Beginning with the most recent)

Date	Academic Degree	Place of Issue	Address
2010-2013	Ph.D. In electronics and Systems	France	Blaise Pascal University/ Alternative Energies and Atomic Energy Commission research organizations.
2008/2010	Master of Engineering Sciences, Speciality Communicating Systems, Embedded Electronics Systems background	France	Pierre et Marie Curie University, Paris VI
2005/2008	Bachelor of Science and Technology in Electronics	France	Pierre et Marie Curie University, Paris VI

PhD, Master or Fellowship Research Title: (Academic Honors or Distinctions)

PhD	Time reversal for wiring diagnosis
Master	
Fellowship	

Professional Record: (Beginning with the most recent)

Job Rank	Place and Address of Work		Date
Assistant Professor	Imam Abdulrahman Bin Faisal University		2017-Now
Freelancer: Researcher, reviewer, editor and translator of technical reports	Concordia university, Montreal, Canada		2015-2017
Research engineer in wire diagnosis	Commissariat of Nuclear and Alternative Energy, Saclay, France		2012-2014

Administrative Positions Held: (Beginning with the most recent)

Administrative Position	Office	Date
Coordinator of Female Affairs	1005N	2022-Now

Scientific Achievements

Published Refereed Scientific Researches
(In Chronological Order Beginning with the Most Recent)

#	Name of Investigator(s)	Research Title	Publisher and Date of Publication
1	Auzanneau F., El Sahmarany L., and Incarbone L.	Method for compensation of the propagation inhomogeneities using time domain reflectometry	**Patent** – ID US20160109549 Filed: 04/24/2014 Issued: 04/21/2016
2	El Sahmarany L., Incarbone L., Sommervogel L., Auzanneau F., and Gregis N.,	Method for analyzing a cable by compensating for the dispersion experienced by a signal when it is propagated within said cable,	**Patent** – ID WO/2014/106611, filed: 30 01 2013, Issued: 10 07 2014
3	Auzanneau F., and El Sahmarany L.,	Method of measuring the ageing of electric cables	**Patent** – ID WO/2013/127630, filed: 13 02 2013, Issued: 06 09 2013

4	El Sahmarany L., Berry L., Ravot N., Auzanneau F. and Bonnet P,	Time reversal for soft faults diagnosis in wirenetworks	Progress In Electromagnetics Research (PIER), May 2013
5	Sommervogel L., El Sahmarany L. and Incarbone L.,	A method to compensate dispersion effect applied toTime Domain Reflectometry	Electronics Letters, April2013
6	El Sahmarany L., Berry L., Ravot N., Auzanneau F. and Bonnet P,	Time reversal for wiring diagnosis	Electronics Letters, September 2012
7	Sara Hawi, Jana Alhozami, Raneem AlQahtani, Dannah AlSafran, Maram Alqarni, Lola El Sahmarany	Automatic Parkinson's disease detection based on the combination of long-term acoustic features and Mel frequency cepstral coefficients (MFCC),	Biomedical Signal Processing and Control,Volume 78,2022,

Refereed Scientific Research Papers Accepted for Publication

#	Name of Investigator(s)	Research Title	Journal	Acceptance Date

Scientific Research Papers Presented to Refereed Specialized Scientific Conferences

#	Name of Investigator(s)	Research Title	Conference and Publication Date
1	El Sahmarany L., Auzanneau F. and Bonnet P.,	Novel Reflectometry Method Based on Time Reversal for Cable Aging Characterization	58th IEEE Holm Conference on Electrical Contacts, Portland, Oregon USA, September 2012
2	El Sahmarany L., Auzanneau F., Berry L. et Bonnet P.,	Nouvelle méthode de diagnostic filaire basée sur le retournement Temporel	16ème édition du Colloque International sur la Compatibilité Electromagnétique, Rouen, April 2012
3	El Sahmarany L., Auzanneau F. and Bonnet P.,	A new method for detection and characterization of electrical cable aging	Progress in Electromagnetic Research Symposium, Kuala Lumpur, 27-30 March 2012
4	El Sahmarany L., Auzanneau F. and Bonnet P.,	Etude et mise en œuvre des méthodes de diagnostic de câbles par retournement temporel	Assemblée générale Interférences d'Ondes, Nice, 24-26 October 2011

5	A. Albathi, A. AlQahtani, H. Alshagawi, S. Almoammer, E. Al-Fakih and L. ElSahmarany,	Design of a smart in-sole to model and control the pressure under diabetic patients	2019 8th International Conference on Modeling Simulation and Applied Optimization (ICMSAO), Manama, Bahrain, 2019, pp. 1-6,

Completed Research Projects

#	Name of Investigator(s) (Supported by)	Research Title	Report Date
	Lola El Sahmarany (CEA)	Improvement reflectometry methods for cable diagnosis	2014
	Lola El Sahmarany (Ecole Normales Superieure, Paris)	Development, management and optimization of VHDL code for ultra-fast acquisition cards based on virtex5 (Triton-V5VXS DK01) . Measurement and feedback of a superconducting quantum bit using Digitat-Analog-Convertor (DAC) and Analog-Digital-Convertor (ADC)	2010

Current Researches

#	Research Title	Name of Investigator(s)
1	A smart mask to protect from the coronavirus, monitor coughing and predict contagiousness.	Lola El Sahmarany, AlOmari, Abdul-Hakeem Alshammari, MAHA Alabdullah, Meernah, Sharukh, Sana
2	Automated Approach to Detect Heart Rate Variability obtained from Electrocardiographic and Photoplethysmographic signals using Deep Neural Network	Lola El Sahmarany, AlOmari, Abdul-Hakeem Tamal, Mahbubunnabi

Contribution to Scientific Conferences and Symposia

#	Conference Title	Place and Date of the Conference	Extent of Contribution

Membership of Scientific and Professional Societies and Organizations

-
-

Teaching Activities

Undergraduate

#	Course/Rotation Title	No./Code	Extent of Contribution

			(no. of lectures/Tutorials. Or labs, Clinics)
1	Introduction to Engineering	ENG 251	16 Lectures
2	Technical writing	ENG 401	16 Lectures/ each 1st semester of the year since 2017
3	Biomedical Digital Signal Processing	BIOEN 513	16 Lectures/ each semester each 1st semester of the year since 2017
4	Electrical Circuit	ENG 331	16 Lectures/ each semester each 1st semester of the year since 2018
5	Senior Design Project	BIOEN 531	16 Meeting/ each semester since 2018

Brief Description of Undergraduate Courses Taught: (Course Title – Code: Description)

Introduction to Engineering ENG 251:
This course provides introduction to engineering, its disciplines, and its interaction with society. Engineering profession, computer applications and programming related to engineering; Broad overview of the fields of biomedical, construction, environmental, traffic and transportation engineering, including professional societies and their student chapters, professional licensing and registration, professional codes of ethics, the elements of engineering design, and the scope of analysis and design activities undertaken by private- and public-sector engineering design professionals.
Problem-solving exercises apply fundamental concepts from engineering fields to integrate the steps of analysis, synthesis, and evaluation through individual homework assignments and group projects that require attention to a broad range of issues. The course also exposes the students to issues related to engineering practice such as working in teams, scheduling, evaluating risk and making ethical decisions. In addition to regular lectures and project exercises, the course includes guest speakers and class demonstrations.

Technical Writing, ENG 401:
This course focuses on various forms of academic and personal essay-writing. Original essay writing and class criticism and discussion. Model essays and essays on the craft of writing reading and discussion for verbal logic, communicative power, and visceral appeal.

Biomedical Digital Signal Processing BIOEN 513:
To give the student an overview of digital processing of biomedical signals. To review the basic DSP algorithms including FFT, filtering, etc. and their application to biomedical signal enhancement and analysis.

Electrical Circuit ENG 331:
This course serves to introduce the students to fundamentals of electric circuits, the simplification methods, and the techniques used to analyze the electric circuits, with some applications related to the medical field. This course also reinforces mathematical knowledge and adding universal quantitative analysis tools in solving, analyzing, and designing problems. This course includes laboratory where various experiments are designed and measured. The course topics include: Ohm's law, parallel and series resistances, Kirchhoff's

laws, voltage and current division laws, node-voltage and current-mesh analyses, Thevenin and Norton theorems, maximum power transfer, RLC network analysis, and filter design for biomedical applications.
Senior Design Project BIOEN 531: Individual research in a field of special interest under the supervision of a faculty member as a requirement for the B.Sc. degree, culminating in a written report/thesis. The central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. The Graduation Project is divided between two semesters. Methodology is developed and pre-data are collected in the first semester. Experiment is run, data is analyzed, and conclusions are sought in the second semester.

Postgraduate

#	Course/Rotation Title	No./Code	Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics)
1			
2			

Brief Description of Postgraduate Courses Taught: (Course Title – Code: Description)

1	
2	

Course Coordination

#	Course Title and Code	Coordination	Co-coordination	Undergrad.	Postgrad.	From	To

Guest/Invited Lectures for Undergraduate Students

#	Activity/Course Title and Code	Subject	College and University or Program	Date
1				

Student Academic Supervision and Mentoring

#	Level	Number of Students	From	To
	Bachelor	**12**	**17/10/2018**	**Now**

	Master	**2**	**17/10/2018**	**Now**

Supervision of Master and/or PhD Thesis

#	Degree Type	Title	Institution	Date
1	Master	Methods of wire diagnosis	Laboratory of Embedded System Reliability of CEA	2013

Ongoing Research Supervision

#	Degree Type	Title	Institution	Date

Administrative Responsibilities, Committee and Community Service **(Beginning with the most recent)**

Administrative Responsibilities

#	From	To	Position	Organization
1	**01/2017**	**Now**	**Coordinator of Biomedical Engineering department**	**Imam Abdulrahman Bin Faisal University.**
2	**01/2017**	**Now**	**Head of summer training II**	**Imam Abdulrahman Bin Faisal University.**

Committee Membership

#	From	To	Position	Organization
1	09/2017	present	Training Committee	Imam Abdulrahman Bin Faisal University
2	09/2018	Present	Alumni Committee	Imam Abdulrahman Bin Faisal University

Scientific Consultations

#	From	To	Institute	Full-time or Part-time

Volunteer Work

#	From	To	Type of Volunteer	Organization
1	2014	2016	Mentoring and advising researchers	Concordia University

Personal Key Competencies and Skills: (Computer, Information technology, technical, etc.)

1	Programming Languages: C++, VHDL
2	Software and simulation: Matlab, Labview, Scilab, FDTD, Modelsim, Microsoft Office, Latex
3	Platforms: Windows, Linux

Last Update

.....01../...16../2022