



IMAS 2024

Program





Foreword

It is our great pleasure to welcome you to the 2nd edition of the International Microwave & Antennas Symposium (IMAS-2024), taking place in Marrakech, Morocco, from October 21 to 24, 2024. Held under the auspices of IEEE MTT-S and IEEE AP-S, IMAS-2024 is technically sponsored by the Moroccan School of Engineering Science and Abdelmalek Essaadi University in Morocco (<https://imas2024.org/>).

IMAS24 has successfully attracted an outstanding number of participants from academia, industry, and government, representing around forty nationalities, all taking part in this event. IMAS2024 offers a rich and attractive scientific program, shedding light on the current state of the art and highlighting the latest developments and innovations in diverse topics related to antennas and propagation, microwave circuits, photonics, measurements, and their wide range of applications, including those focused on sustainable development. This conference aims to provide an ideal platform for the exchange of scientific and technical information at both academic and industrial levels, and to foster collaboration and cooperation in microwaves, antennas, and propagation, both in Africa and across the world. IMAS-2024 includes workshops, invited talks, technical sessions, poster sessions, special sessions, tutorials, a banquet, and social events.

We would like to express our heartfelt thanks and gratitude to all the keynote, tutorial, and invited speakers, as well as the workshop chairs, organizers, and all the members of the organizing committee for their incredible work, which contributed to the overwhelming success of this special edition of IMAS24.



Prof. Mohamed Essaaidi
EMSI Director
Rabat, Morocco



Prof. Ayman M. El-Tager
Electronic Eng. Dpt. Chair, MTC
Cairo, Egypt

Program Overview

NSF WORKSHOP – MONDAY, OCTOBER 21ST, 2024 (1ST DAY OF WORKSHOP)

| Time | Program | |
|---------------|---|--|
| 8:30 - 9:00 | Workshop & Conference Check-in (Main Hall) | |
| 9:00 - 9:30 | Opening Remarks (Room Atlas III) Prof. Samir El-Ghazaly et al. | |
| 9:30 - 12:15 | Workshop 1: Advancements in Power Amplifier Design and High-Frequency Electronic Devices for Modern Communication Systems (Room Atlas III) Includes Coffee Break (10:10 AM - 10:30 AM) Ali Darwish, Hua Wang, Slim Boumaiza, | |
| 12:15 - 13:30 | Lunch | |
| 13:30 - 15:00 | Workshop 1 (continued) (Room Atlas III) Dimitris Pavlidis, Gamal Hegazi | Workshop 2 Satellite Communications (Room Atlas IV) Justin Stambaugh Ramesh Gupta, |
| 15:00 - 15:30 | Coffee Break (Main Hall) | |
| 15:30 - 17:00 | Workshop 1 (continued) (Room Atlas III) Zacharia Quadirhi, Telesphor Kamgaing | Workshop 2 (continued) Goutam Chattopadhyay Tim Lee |
| | End of the DAY | |

DAY 1 – TUESDAY, OCT. 22ND, 2024

| Time | Program | | | | |
|---------------|---|--|--|--|---------------------------------|
| 8:30 - 9:00 | Registration | | | | |
| 9:00 - 9:45 | Conference Opening (Room Atlas IIII) IMAS2024 Chairs, IEEE-MTTS president, IEEE-APS president | | | | |
| 9:45 - 10:30 | Invited talk 1: Novel Solutions for Microwave Sensors (Room Atlas III) Prof. Maurizio Bozzi, IEEE-MTTS president, Italy | | | | |
| 10:30 - 11:00 | Coffee Break (Main Hall) | | | | |
| 11:00 - 11:45 | Invited talk 2: Antennas and microwave computational and design methodologies and interdisciplinary applications (Room Atlas III) Prof. Branislav M. Notaros IEEE-APS president, USA | | | | |
| 11:45 - 12:30 | Invited Talk 3: Flexible, Wearable, Disposable Wireless Communication and Sensing Systems Through Additive manufacturing (Room Atlas III) Prof. Atif Shamim, KAUST, Saudia Arabia | | | | |
| 12:30 - 13:30 | Lunch | | | | |
| 13:30 - 15:00 | S1 Antennas and related Topics 1 (Room Atlas I) | S2 RF/Microwave Circuits and Systems 1 (Room Atlas II) | Young Professionals (Room Atlas III) Panel Discussions & Meet up | MTT-S Chapter Chairs Meeting (Room Atlas IV) | Poster Session 1 (Main Hall) |
| 15:00 - 15:20 | Coffee Break (Main Hall) | | | | |
| 15:20 - 16:00 | Seminar Opportunities for Research Funding (Room Atlas III) | | | | |
| 16:00 - 17:30 | S3 Antenna and related topics 2 (Room Atlas I) | S4 RF/Microwave Circuits and Systems 2 (Room Atlas II) | S5 Measurements (Room Atlas IV) | Tutorial 1 (Atlas III) Design of Broadband Matching Networks and Microwave Amplifiers via Real Frequency Techniques (RFT) | |

DAY 2 – WEDNESDAY, OCT. 23RD, 2024

| Time | Program | | | |
|---------------|---|--|---|--|
| 9:00 - 9:45 | Invited talk 4: NASA Technologies to Explore The Universe (Room Atlas III) Prof. Goutam Chattopadhyay, NASA's Jet Propulsion Laboratory (JPL), California Institute of Technology | | | Tutorial 2 Understanding Quantum Computing Prof. Abbas Omar (Room Atlas II) |
| 9:45 - 10:30 | Invited Talk 5: Additive Manufacturing: Emerging Opportunities for Microwave Components (Room Atlas III) Prof. Cristiano Tomassoni, University of Perugia, Perugia, Italy | | | |
| 10:30 - 11:00 | Coffee Break | | | |
| 11:00 - 11:45 | Invited Talk 6: UWB HOLOGRAPHIC ELECTROMAGNETIC IMAGING FROM MICROWAVES TO THZ (Room Atlas III) Prof. Luis Jofre-Roca, Technical University of Catalonia (UPC), Barcelona, Spain | | | Workshop 3 Quantum Computing Abbas Omar Raafat Mansour (Room Atlas II) |
| 11:45 - 12:30 | Invited Talk 7: Net ZERO Radio Communications Use of SWIPT for IoT applications (Room Atlas III) Prof. Nuno Borges Carvalho University of Aveiro, Portugal | | | |
| 12:30 - 13:30 | Lunch | | | |
| 13:30 - 14:15 | Invited Talk 8: How to Bring 6G to Reality? (Room Atlas III) Prof. Qammer Abbasi University of Glasgow, UK | | | Poster Session 2 (Main Hall) |
| 14:15 - 15:45 | Workshop 4 (Room Atlas III) AI and GPR tools for landmine detection Prof. Yahia Antar & Prof. Jose Felix Vega | S7 RF/Microwave Circuits and Systems 3 Room (Atlas II) | WIE Panel Session (Atlas IV) Moderator Prof. Aznabet & Prof. Olga Boric-Lubecke | |
| 15:45 - 16:10 | Coffee Break | | | |
| 16:10 - 17:40 | Workshop 4 (Continued) (Room Atlas III) | S9 RF/Microwave Circuits and Systems 4 (Room Atlas II) | IEEE AP-S SIGHT COPE Panel Session (Room Atlas IV) Ajay Poddar, Yahia Antar, Jawad Siddiqui, Anisha M. Apte, M. Essaaidi | S8 Antennas and related topics3 (Room Atlas I) |
| 19:00 | Gala Dinner | | | |

DAY 3 – THURSDAY, OCT. 24TH, 2024

| Time | Program | | |
|---------------|---|---|--|
| 9:00 - 9:45 | Invited talk 9: Compact Circularly Polarized Stepped-Reflectarray for Broadband Enhancement (Room Atlas III) Prof. Ahmed A. Kishk Concordia University, Montréal, Québec, Canada | | Young Professionals Research Activities (Main Hall) |
| 9:45 - 10:30 | Invited Talk 10: THz Heterodyne Receivers: Challenges and Current Status (Room Atlas III) Prof. Imran Mehdi Jet Propulsion Laboratory, California Institute of Technology | | |
| 10:30 - 10:50 | Coffee Break | | |
| 10:50 - 12:20 | S10 Antennas and related topics 4 (Room Atlas I) | Workshop 5 (Room Atlas III) Biomedical Applications Aly E. Fathy, Victor Lubecke, George Shaker, Rong Zheng | Tutorial 3 How to Write a Paper for IEEE Journals and Navigate the Review Process Prof. George E. Ponchak (Room Atlas II) |
| 12:20 - 13:40 | S11 Antennas and related topics 5 (Room Atlas I) | | |
| 13:40 - 14:30 | Lunch | | |
| 14:30 - 15:15 | Invited Talk 11: Key Technological Innovations for Next Generation (Terrestrial/ Submarine) Optical Transport Networks (Room Atlas III) Prof. Hatem Abdelkader MITRE Corporation, USA | | |
| 15:15 - 16:30 | Closing & Awards Ceremony (Room Atlas III) IMAS2024 Chairs Talk, Awards Distribution | | |

Events

Workshops

| | |
|-------------------|--|
| Workshop 1 | Advancements in Power Amplifier Design and High-Frequency Electronic Devices for Modern Communication Systems |
| Workshop 2 | Satellite and Space Communication |
| Workshop 3 | Quantum Computing |
| Workshop 4 | AI and GPR tools for landmine detection |
| Workshop 5 | Biomedical Applications |

Panel Sessions

| | |
|-------------------|--|
| Activity 1 | Young Professionals |
| Activity 2 | Young Professionals Research Activities (Main Hall) |
| Activity 3 | WIE Panel Session: Antennas and Microwave Circuits |
| Activity 4 | IEEE AP-S SIGHT COPE |

Tutorials

| | |
|-------------------|---|
| Tutorial 1 | Design of Broadband Matching Networks and Microwave Amplifiers via Real Frequency Techniques (RFT) |
| Tutorial 2 | Understanding Quantum Computing |
| Tutorial 3 | How to Write a Paper for IEEE Journals and Navigate the Review Process |

Seminar

| | |
|----------------|---|
| Seminar | Opportunities for Research Funding |
|----------------|---|

Keynote speakers and panelists should be ready 15 minutes before the beginning of the session in order to perform the necessary sound, video, and screen sharing tests.

NSF WORKSHOPS – MONDAY, OCTOBER 21ST, 2024

8:30-09:00 – MAIN HALL

Workshop and Conference Check in

9:00-09:30 – ROOM ATLAS III





Opening Remarks

9:30-18:00 - Room Atlas III

| NSF Workshop 1 | | Advancements in Power Amplifier Design and High-Frequency Electronics Devices for Modern Communication Systems | |
|----------------|---|---|--|
| Chairs | | <i>Prof. Samir EL Ghazaly</i> , University of Arkansas, USA <i>Prof. Vijay Nair</i> , Intel (retired) | |
| KN |  | Mastering Power Amplifier Design: Essential Principles | <i>Prof. Ali Darwish</i> Johns Hopkins University, USA |
| 9:30-10:15 | | | |
| 10:15-10:45 | | Coffee Break | |
| KN |  | Fundamentals of RF and mm-Wave Power Amplifiers | <i>Prof. Hua Wang</i> Swiss Federal Institute of Technology Zurich, Switzerland |
| 10:45-11:30 | | | |
| KN |  | Advances on Millimeter-Wave Integrated Power Amplifiers for Massive MIMO Wireless and Satellite Communications | <i>Prof. Slim Boumaiza</i> University of Waterloo, Canada |
| 11:30-12:15 | | | |
| 12:15-13:30 | | Lunch | |
| KN |  | Electronic Devices for Next Generation High-Frequency Application | <i>Prof. Dimitris Pavlidis</i> Florida International University, USA |
| 13:30-14:15 | | | |
| KN |  | Linear Microwave Power Amplifiers for Modern Complex Communications Waveforms | <i>Prof. Gamal Hegazi</i> Hegazi Consulting, LLC, USA |
| 14:15-15:00 | | | |
| 15:00-15:30 | | Coffee Break | |
| KN |  | Advancements in mm-Wave and Sub-THz Load-Pull Techniques for Next-Generation Communication and Radar Systems | <i>Dr. Zacharia Ouardirhi</i> Maury Microwave, USA |
| 15:30-16:15 | | | |
| KN |  | Packaging Technologies for Millimeter-Wave and Sub-Terahertz Systems | <i>Dr. Telesphor Kamgaing</i> Intel Corporation, USA |
| 16:15-17:00 | | | |

NSF WORKSHOPS – MONDAY, OCTOBER 21ST, 2024

13:30-18:00 - Room Atlas IV

| NSF Workshop 2 | | Satellite Communications | |
|--------------------------|---|--|--|
| Chairs | | <i>Dr. Mohamed Abouzahra</i> , MIT Lincoln Laboratory | |
| KN 13:30-14:15 |  | Space Surveillance in a Congested and Contested Domain <i>Dr. Justin Stambaugh</i> MIT Lincoln Laboratory USA | |
| KN 14:15-15:00 |  | Role of Satellite and Space Networks in Emerging 5G/6G Communication Infrastructure <i>Dr. Ramesh Gupta</i> Ligado Networks, Reston VA, USA | |
| 15:00-15:30 | | Coffee Break | |
| KN 15:30-16:15 |  | Millimeter-Wave and Terahertz Sensors, Spectrometers, and Radars for Space Applications <i>Dr. Goutam Chattopadhyay</i> NASA's Jet Propulsion Laboratory (JPL), California Institute of Technology | |
| KN 16:15-17:00 |  | The Role of Advanced Microelectronics and Heterogeneous Integration for Aerospace Communications and Sensing System <i>Dr. Tim Lee</i> Boeing Technical Fellow, USA | |

DAY 1 – TUESDAY, OCT. 22ND, 2024**8:30-09:00 – MAIN HALL****Registration****9:00-09:45 – ROOM ATLAS III****Opening Ceremony*****Prof. Branislav M. Notaros****IEEE AP President | Director of Electromagnetics Laboratory, Colorado State University, USA.****Prof. Maurizio Bozzi****IEEE MTT President | Full Professor at University of Pavia, Italy****Prof. Manfred J. Schindler****Vice President, IEEE Technical Activities****Prof. Samir EL Ghazaly (OC Chair (MTT))****University of Arkansas, USA.****Prof. Yahia Antar (OC Chair (AP))****Royal Military College of Canada****Prof. Mohamed Essaïdi (General Chair)****EMSI Director, Rabat, Morocco.****Prof. Ayman M. EL-Tager (General Chair)****Electronic Eng. Dpt. Chair, MTC Cairo, Egypt.*

DAY 1 – TUESDAY, OCT. 22ND, 2024
9:45-12:30 - Room Atlas III
Plenary Talks
KN1

9:45 - 10:30

Chair: Prof. S. EL Ghazaly


Novel Solutions for Microwave Sensors
Prof. Maurizio Bozzi

IEEE-MTTS president, Italy

10:30 - 11:00

Coffee Break

KN2

11:00-11:45

Chair: Dr. Yahia Antar


Antennas and microwave computational and design methodologies and interdisciplinary applications
Prof. Branislav M. Notaros

IEEE-APS president, USA

KN3

11:45-12:30

Chair: Dr. M. Essaïdi


Flexible, Wearable, Disposable Wireless Communication and Sensing Systems Through Additive
Prof. Atif Shamim

KAUST, Saudia Arabia

12:30 - 13:30

Lunch

13:30-15:00 - Room Atlas I
S1

Antennas and related Topics 1

 Chairs
 Prof. O.B-Lubecke
 Prof. M. Aznabet

A New Compact Cantor Set Fractal MIMO Antenna for 5G Millimeter-Wave Applications
Omaima Benkhadda; Abdelati Reha; Mohamed Saih and meryama harrou
Second-Order Quad-Band Bandpass Frequency Selective Surface With Multiple Transmission Zeros
Run ze Li, Li Yang and Roberto Gómez-García
Enhanced Coupling and Bandwidth in MIMO System Antenna Based on Dielectric Resonator Antenna Using Meta-Surface
Safia Jaouad; Ikhlas Hammouchi; Otman EL Mrabet; Mohsine Khalladi; Mariem Aznabet
An Enhanced Octagonal Microstrip Patch Antenna Circularly Polarized for WIMAX and 5G Mid-Band Applications
Abdelilah Ait lahcen; Samira Chabaa; Saida Ibnyaich; Abdelouahab Zeroual
13:30-15:00 - Room Atlas II
S2

RF/Microwave Circuits and Systems 1

 Chairs
 Prof. M. Kanjaa
 Prof. S. Iben Yaich

Signal-Interference Planar Bandpass Filters and Diplexers With Frequency-Symmetrical/Asymmetrical Stopband-Attenuation Profiles Using Filtering Cascading Networks
Mohamed Malki; Li Yang, José-María Muñoz-Ferreras and Roberto Gómez-García
Ku-Band Groove-Gap-Waveguide Dual-Band Bandpass Filter With Multi-Transmission-Zero Sharp-Rejection Transfer Function
Mohamed Malki; Li Yang and Roberto Gómez-García
Investigating Thermal Effects and Mitigation Strategies in Multi-Finger GaN HEMTs
Amirreza G Avval and Soheil Nouri; Dan Denninghoff; Ali Darwish; Samir El-Ghazaly
Finger Width Effects on Performance of GaN HEMTs
Soheil Nouri and Amirreza G Avval (University of Arkansas, USA); Ali Darwish (Army Research Laboratory, USA); Samir El-Ghazaly (University of Arkansas, USA)

| | |
|---|---|
| | X/Ku Octave-Bandwidth Magic Tee for Satellite Communication <i>Abdellah El kamili; Abdelwahed Tribak; Jaouad Terhzaz; Tomás Fernández</i> |
| 13:30-15:00 – MAIN HALL | |
| Poster session1 Chairs <i>Prof. M. Khalladi</i> <i>Prof. Tribak</i> <i>Abdelwahed</i> | Vector Modulator Based Low RMS Phase Error Phase Shifter for KA-Band Applications <i>Melih Gokdemir; Alessandro Fonte; Giandomenico Amendola; Emilio Arneri and Luigi Boccia</i> |
| | A 2.4GHz Electrically Small Antenna for IoT Terminals <i>Mahmoud Abdallah and Al P. Freundorfer; Yahia Antar</i> |
| | A Circularly Polarized Low-Cost IoT Electrically Small Antenna <i>Mahmoud Abdallah and Al P. Freundorfer Antar</i> |
| | Design and Simulation of CMOS Fractional-N All-Digital Phase-Locked Loops (ADPLLs) <i>Tangus Koech</i> |
| | A Compact Wideband Low-Profile Monopole Antenna for Lower Sub-6 GHz 5G IoT Applications <i>Said Douhi</i> |
| | Innovative Design of a Compact Diplexer Using Heterogeneous Filters for 5G and WiMAX <i>Soufiane Achrao; Dahbi El Khamlichi; Alia Zakriti; Moustapha El Bakkali; Souhaila Ben Haddi</i> |
| | Comparative Study of Indoor Localization Methods Using RFID Technology <i>Badr Jouhar; Abdelwahed Tribak; Jaouad Terhzaz; Tizyi Hafid</i> |
| | Impact of Microwave Radiation Treatment on the Mortality and Fertility of the Wild Cochineal Dactylopius Opuntiae <i>Fatima Zahrae EL Arroud, Karim EL fakhouri, Youness Zaarour, Chaimae Ramdani, Mustapha El Bouhssini; Hafid Griguer</i> |
| | Design of a Broadband Low-Noise Amplifier (LNA) Based on Coupled-Line Filters With a Notch Filter to Reject Unwanted Frequencies <i>Faycal El Hardouzi; Mohammed Lahsaini</i> |
| | Design, Fabrication, and Validation of Printed Embedded Antennas <i>Julen Caballero Anton; Jose M Gonzalez-Perez; Izaskun Bustero; Marta Cabedo-Fabrés; Leire Bilbao; Jon Maudes</i> |
| | Study and Design of a Reliable Antenna Deployment System for Nanosatellites <i>Sara Essoumati; Oulad said Ahled; Gharnati Fatima</i> |
| | Polarization Agile Frequency Selective Surface(FSS) for C, X and Ku Bands <i>Shahlan Ahmad, Sr.; Adnan Nadeem; Noshewan Shoaib</i> |
| | Design and Optimization of Cross-Shaped Slot UWB Miniature Patch Antennas for 28 GHz 5G mmWave Applications Using ANN Based on k-Fold Cross-Validation <i>Lahcen Sellak; Samira Chabaa; Saida Ibnyaich, Asma Khabba; Abdelouahab Zeroual; Atmane Baddou</i> |
| | Design and Modeling of a Ferrite Circulator Using Substrate Integrated Waveguide (SIW) and the WCIP Method <i>Noemen Arroussi Ammar</i> |
| 13:30-15:00 – ROOM ATLAS III | |
| Young Professionals | Panel Discussions & Meet up Prof. Qammer Abbasi |
| 13:30-15:00 – ROOM ATLAS IV | |
| MTT-S Chapter Chairs Meeting | |
| 15:00 - 15:20 | Coffee Break |
| 15:20-16:00 – ROOM ATLAS III | |

Seminar

Chair

Prof. M. Essaïdi



US-Africa Research Collaboration Opportunities

Dr. Dalal Najib,

The National Academies of Sciences, Engineering, and Medicine, USA



Opportunities for Research Funding

Dr. Mamadou Diallo

Science Director London, UK

16:00-17:30 – ROOM ATLAS III

Tutorial 1

Chair

Prof. T. Abuelfadl



Design of Broadband Matching Networks and Microwave Amplifiers via Real Frequency Techniques (RFT)

Prof. Yarman Siddik

SYMPHONE Science and Technology, Turkey

16:00-17:30 - Room Atlas I

S3

Antennas and related Topics 2

Chairs

*Prof. O. EL Mrabet
Prof. George Shaker*

Flexible Passive UHF RFID Tag for the Identification of Blood Bags and Intravenous Solutions

Pape W Sarr; Aminata Diop; Aliou Diallo; Arnaud Vena; Ibra Dioum

A Circularly/ Linearly Polarized Multiband Antenna With Alternating Split-Ring Resonators for Wireless Applications

Mahdi Middle initial Abdelkarim,

Trapezoidal Antenna With Reconfigurable Frequency for Wireless Communication Systems

Abraka Mohsen; Faouzi Rahmani; Naima Amar Touhami

Reducing Mutual Coupling Using Ring SRR MetaSurface for Multiband MIMO Antenna

Ahmed Zahran; Mahmoud Abdelrahman Abdalla

Hexa Cell Triangular CSRR for the Non Invasive Detection of Blood Glucose

Boutheina Tlili; Miziya K

16:00-17:30 - Room Atlas II

S4

RF/Microwave Circuits and Systems 2

Chairs

*Prof. A. ELTager
Prof. Tajeddin Elhamadi*

Dual Channel C-Band Solid State Power Amplifier for Unmanned Aerial Vehicles

Chandrashekar K; Vanitha Chavan L; Ashwini U

Ultra Compact X-Band High Power Amplifier With Integrated Monitoring and Reporting System

Narendra S

High Performance RFID Temperature Sensor for IoT Applications

Noureddine Boulejjfen; Riheb Faouel; Maha Added

Design Considerations for a Driver Power Amplifier With the Supply Modulation Concept

Yusuf Deniz Tandogan, Alperen Tunç and Mustafa Berke Yelten

A Design Methodology for a Dual-Mode Coplanar Waveguide Junction Circulator

Karthik Srinivasan; Amal El-Ghazaly

Development of a Compact Microstrip Triangular Open-Loop Bandpass Filter Using Meander Lines for WiFi 6E

Souhaila Ben Haddi; Soufiane Achraou; Moustapha El Bakkali; Dahbi El Khamlichi; Nihade Taheer; Alia Zakriti; Asmaa Zugari; Naima Amar Touhami

16:00-17:30 - Room Atlas IV

S5
Measurements
Chairs
Prof. M. Aoutoul
Prof. Felix Vega

Design and Fabrication of a Rogowski Coil to Measure Fast Current of MARX Generator

Hamad Deiban; Umar Hashmi, Aaasha AlAli and GideonNimo Appiah; Fernando Albarracín-Vargas; Felix Vega and Chaouki Kismi

Boosting Microwave Hydration Sensors Performance With Machine Learning Techniques

Oumaima Afif, Alessandra Di Florio Di Renzo; Simone Trovarello; Alessandra Costanzo; Marco Tartagni

Continuous Wave Doppler Radar Occupant Count Estimation Using Spectral Features

Franco Ramírez; Almudena Suarez; Victor Manuel Lubecke; Olga Boric-Lubecke

6-Port Rotationally Symmetric Antennas Supporting Orbital Angular Momentum Modes

Rubén Aldana Alonso; Youness Akazzim; Marc Jofre; Md. A. Towfiq; Bedri Cetiner; Sebastian Blanch; Jordi Romeu; Luis Jofre

DAY 2 – WEDNESDAY, OCT. 23RD, 2024

9:00-10:30 - Room Atlas III

Plenary Talks

KN4

9:00 - 9:45

Chair

Dr. Nuno



NASA Technologies to Explore the Universe

Prof. Goutam Chattopadhyay

NASA's Jet Propulsion Laboratory (JPL), California Institute of Technology

KN5

9:45-10:30

Chair

Dr. A. El-Tajer



Additive Manufacturing: Emerging Opportunities for Microwave Components

Prof. Cristiano Tomassoni

University of Perugia, Perugia, Italy

9:00-10:30 - Room Atlas II

Tutorial 2

9:00-10:30

Chair

Prof. A. Oulad Said



Understanding Quantum Computing

Dr. Omar Abbas

University of Magdeburg, Germany

10:30 - 11:00

Coffee Break

11:00-12:30 - Room Atlas III

Plenary Talks

KN6

11:00-11:45

Chair

Prof. O. EL Mrabet



UWB Holographic Electromagnetic Imaging from Microwaves to Terahertz

Prof. Luis Jofre-Roca

Technical University of Catalonia (UPC), Barcelona, Spain

KN7

11:45-12:30

Prof. Yahia Antar



Net ZERO Radio Communications Use of SWIPT for IoT applications

Prof. Nuno Borges Carvalho

University of Aveiro, Portugal

11:00-12:30 - Room Atlas II




NSF

Workshop 3

Chair

Quantum Computing

Dr. Omar Abbas, University of Magdeburg, Germany

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|--------------------------|---|---|
| KN 9:30-10:15 |  | Understanding Quantum Computing (Part I) Dr. Omar Abbas University of Magdeburg, Germany |
| KN 10:45-11:30 |  | Understanding Quantum Computing (Part II) Dr. Raafat Mansour University of Waterloo, Canada |
| KN 11:30-12:15 |  | Navigating the Design Challenges of Superconducting Quantum Systems Dr. Mohamed Hassan Keysight Technologies, USA |
| 12:30 - 13:30 | Lunch | |

13:30-14:15 - Room Atlas III




Plenary Talk

| | | |
|---|--|---|
| KN8 11:00-11:45 Chair <i>Prof.H. Abdelkader</i> |  | How to Bring 6G to Reality? Prof. Qammer Abbasi University of Glasgow, UK |
|---|--|---|

13:30-15:45 – Main Hall

| | |
|---|---|
| Poster session 2 Chairs <i>Prof. Teresa M. Martín-Guerrero</i> <i>Prof. T. Abuefadal</i> | Broadband 0.1 - 18 GHz Transceiver <i>A Kordovski and D. Galanos; Ed Viveiros; Sami Hawasli; Ali Darwish</i> Design and Optimization of a Multiband SIW Antenna Using the PSO Algorithm <i>Dahbi El Khamlichi; Soufiane Achraou; Faouzi Rahmani; Souhaila Ben Haddi; Moustapha El Bakkali; Taj-Eddin Elhamadi; Naima Amar Touhami; Alia Zakriti</i> Microwave Sensors for Permittivity Measurement of Solid Materials <i>Fatima Ataa Allah; Otman EL Mrabet; Mariem Aznabet</i> Evaluation of GHz Band Q Factor of ScAlN and AlN Films by Pulse-Echo Technique for RF MEMS Device <i>Yohkoh Shimano and Takahiko Yanagitani</i> Electromechanical Coupling Coefficient Evaluation Method Using RLC Electric Resonance in the GHz Band <i>Hiroki Uchida, Kohei Ekida, Yohkoh Shimano and Takahiko Yanagitani</i> Phased Array Antenna Technology for Enhanced Beamforming in 5G Systems <i>Neila Kammoun; Ali Gharsallah</i> SLL Suppression Performance of the Blackman Linear Array Antenna <i>Hartuti Mistialustina; Kusmadi Kusmadi; Ketut Abimanyu Munastha; Budi Syihabuddin; Rheyuniarto Sahlendar Asthan; Achmad Munir</i> Wide-Band Gysel Combiner for C-Band High Power Applications <i>Wajid Zaman Khattak, Oliver Silva, Mae Nasser AlMansoori and Felix Vega</i> Microwave Sensor for Precise Temperature Detection in Phosphate Materials <i>Youness Zaarour</i> High-Precision Satellite Position Interpolation: A Comparison of Lagrange, Cubic Spline, and Artificial Neural Network Methods <i>Othmane El attiq; Serge Reboul; Adnane Latif; Safae Abouelouafa</i> Enhancing Antenna Gain Using 2D-EBG Structures for C-Band Applications |
|---|---|

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|-------------------------------------|--|
| 14:15-15:45 - Room Atlas III | <p><i>Loubna Rmili; Moustapha El Bakkali; Bouchra Ezzahry; Bouselham Samoudi</i></p> <p>Minimizing Body Impact on Wearable Rectenna Performance for Energy Harvesting Using a Huygens Source <i>Abdelmounaim Tachrifat; Mustapha Bajtaoui; Otman EL Mrabet; Mohammed Kanjaa; Mohammed Ali Ennasar; Mohcine Khalladi</i></p> <p>Two-Element Circularly Polarized Transparent MIMO Antenna for Sub-Six Wireless Communication Applications <i>Lamia M Khashan, Amr Gamal and Mohamed Wael</i></p> <p>Comparative Study of Impedance Matching Techniques in UHF RFID Systems <i>Redouane Jouali; Azize Bhajj; Abderrahim Haddad; Fadwa El Moukhtafi; Youssef Errami; Mohssin Aoutoul</i></p> <p>Design and Study of MIMO Antenna for WLAN Applications by Using DMS and DGS Techniques <i>Hamza El omari el bakali; Aziz Dkiouak; abdelhafid marroun; Mohssine El Ouahabi; Alia Zakriti; Naima Amar Touhami</i></p> |
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| 14:15-15:45 - Room Atlas III | |
| Workshop 4 | AI and GPR tools for landmine detection |
| Chair | <i>Prof. Yahia Antar</i> , Royal Military College, Canada |
| KN 9:30-10:15 |  <p>AI and GPR tools for landmine detection (Part I) Dr. Sultan Abughazal Technology Innovation Institute (TII), UAE</p> |
| KN 10:45-11:30 |  <p>AI and GPR tools for landmine detection (Part II) <i>Dr. Santiago Morales</i> Technology Innovation Institute (TII), UAE</p> |
| KN 11:30-12:15 |  <p>AI and GPR tools for landmine detection (Part II) <i>Prof. Yahia Antar</i> Royal Military College, Canada</p> |

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| 14:15-15:45 - Room Atlas I | |
| S6 Propagation and related topics Chairs <i>Prof. M. Kanjaa</i> <i>Prof. Luis Jofre</i> | <p>Enhanced Permittivity Measurement Using a High-Sensitivity Microwave Sensor Based on Split Ring Resonators <i>Youness Zaarour; Mohammed Ali Ennasar; Otman EL Mrabet; Fatima zahrae Elarroud; Abdessamad Faik and Hafid Griguer</i></p> <p>Path Loss Prediction for V2I Communications Systems: A Performance Analysis of Propagation Models <i>Mongi Ben Ameur; Jalel Chebil; Jamel Bel Hadj Tahar; Mohamed Hadi Habaebi; Hanene Zormati</i></p> <p>Interference-Aware Coded-Beam Radio Resource Management for High-Throughput Satellite Systems- Performance Assessment and Capacity Investigation <i>Eman Abass</i></p> <p>Moving Structures in a 3D FDTD Code <i>Mohammad Marvasti and Halim Boutayeb</i></p> <p>Stellar Aberration and Fizeau's Experiment With Moving Water, Using the FDTD Method <i>Mohammad Marvasti and Halim Boutayeb</i></p> |

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| 14:15-15:45 - Room Atlas II |
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| <p style="text-align: center;">S7</p> <p style="text-align: center;">RF/Microwave Circuits and Systems 3 Chair</p> <p style="text-align: center;"><i>Prof. T. Abuelfadl Prof. Adnan Latif</i></p> | <p>SAW Excitation by Periodically Polarization Inverted Structure for Novel RF Filter <i>Satoshi Matsumura; Yohkoh Shimano and Takahiko Yanagitani</i></p> <p>A Highly Linear and Efficient GaN RF Power Amplifier for Telemetry Applications in S-Band <i>Eslam Nasr; Ahmed M. Elelimy Abounemra; Mohammad Darwish; Ayman Eltager</i></p> <p>GaN/SiC Upper F-Band Single Ended Power Amplifier <i>German Cortes; Kevin Kornegay; Willie Thompson; Michel Kornegay; Ali Darwish</i></p> <p>Broadband Piezoelectric Thin Film Transformer for Terrestrial Digital Band Rectenna Applications <i>Kohei Ekida, Sarina Kinoshita, Yohkoh Shimano and Takahiko Yanagitani</i></p> <p>X-Band High Power Compact Octal Transmit/Receive Module <i>Varsha GH and Devendra Kirad; Ashwini U; Kumari Ranjana Singh; Yogesh T K and Gowtham G</i></p> |
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14:15-15:45 – Room Atlas IV

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| <p>Women in Engineering Session</p> <p>Panelists: <i>Olga Boric Lubecke; Aznabet; Debabani; Choudhury; Alessandra Costanzo; Dalia Mohammed Nashaat; Teresa M. Martín-Guerrero</i></p> | |
| 15:45 -16:10 | Coffee Break |

16:10-17:40 – Room Atlas I

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| <p style="text-align: center;">S8</p> <p style="text-align: center;">Antennas and related Topics 3 Chairs</p> <p style="text-align: center;"><i>Prof Lamia Elkhashan Prof. Victor Manuel Lubecke</i></p> | <p>Self-Attenuating Graphene-Based Antennas Utilizing Polyvinylidene Fluoride (PVDF) Substrates <i>Josef D Frankhouse; Evans Addo-Mensah; Uche Wejinya</i></p> <p>Electromagnetic Scattering by Elliptical Dielectric Cylinder Using the WCIP Method <i>Ahmed Boutta; Noemen Arroussi Ammar; Asmaa Zugari; NaJi Yebari</i></p> <p>Reflective Metasurface Based on Embroidered Meander Resonators <i>Abdelghafour Abraray; Marc Martinez; Ignacio Gil; Nuno Borges De Carvalho; Stanislav Maslovski</i></p> <p>A Multi-Bistatic UGV-GPR System for Increased Surveyed Area Coverage <i>Santiago Morales-Aguilar; Oginne Lapuz; Sultan Abughazal; Asilah Almesmari; Fernando Albarracín-Vargas; Luciano P. Oliveira; Mae Nasser AlMansoori, Felix Vega and Chaouki Kasmi</i></p> |
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16:10-17:40 - Room Atlas II

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| <p style="text-align: center;">S9</p> <p style="text-align: center;">RF/Microwave Circuits and Systems 4 Chairs</p> <p style="text-align: center;"><i>Prof. Ali Darwish Prof. M. Essaaidi</i></p> | <p>Polarization-Agile Antenna for Physiological Radar Monitoring Systems <i>Alberto Hernández-Escobar; Elena Abdo-Sánchez; Javier Mata-Contreras; Teresa María Martín-Guerrero; Jon H Itokazu, Olga Boric-Lubecke and Victor Manuel Lubecke</i></p> <p>Measurement for Determination of Dielectric Material Permittivity Using Air-Host SIW Structure <i>Junas Haidi; Zulfi Zulfi; Achmad Munir</i></p> <p>Design of Wideband Class AB Power Amplifier Using Hybrid Technology and Improved SRFT Matching for Low Power Applications <i>Areeba Ahsan, Shuvadip Sutradhar and Mohammad Jaleel Akhtar</i></p> <p>Reconfigurable Phase-Difference Characteristics of Compact 4x4 Butler Matrix Structures <i>Zulfi Zulfi and Iman Hedi Santoso; Achmad Munir</i></p> <p>Optimized Microwave Ring-Gap Resonator for Microchannel Particules State Monitoring <i>Houda Ataa Allah; Fatima Ataa Allah; Mariem Aznabet; César A Palacios; Youness Akazzim; Otman EL Mrabet; Marc Jofre; Jordi Romeu Robert; Luis Jofre</i></p> |
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16:10-17:40 – Room Atlas IV

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| <p>IEEE AP-S SIGHT COPE Panel Session</p> <p>Panelists:</p> <p>Ajay Poddar, Yahia Antar, Jawad Siddiqui, Anisha M. Apte, M. Essaaidi</p> | |
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DAY 3 – THURSDAY, OCT. 24TH, 2024

09:00-10:30 - Room Atlas III

Plenary Talks

KN9

09:00-09:45

Chair

Prof. Cristiano Tomassoni



Compact Circularly Polarized Stepped-Reflectarray for Broadband Enhancement

Prof. Ahmed A. Kishk

Concordia University, Montreal, Quebec, Canada

KN10

09:45-10:30

Chair

Prof. Cristiano Tomassoni



THz Heterodyne Receivers: Challenges and Current Status

Prof. Imran Mehdi

Jet Propulsion Laboratory, California Institute of Technology, USA

10:30 -10:50

Coffee Break

09:00-10:30 – MAIN HALL

Young Professionals Research Activities

10:50-13:40 - Room Atlas III

NSF
Workshop 5

Biomedical Applications

Chair



Prof. Olga Boric-Lubecke

University of Hawaii, USA

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10:40-11:25



Towards Higher Accuracy in Vital Sign Detection Using MIMO and Deep Learning

Prof. Aly E. Fathy

University of Tennessee, USA

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11:25-12:10



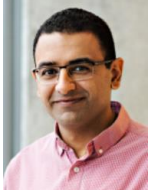
Applications of Machine Learning to Physiological Radar

Prof. Victor Lubecke

University of Hawaii, USA

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12:10-12:55



Revolutionizing Geriatric Care: Wireless Sensors and Digital Twin Technologies for Ambient Health Monitoring

Prof. George Shaker


University of Waterloo, Canada

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| KN 12:55-13:40 |  | Human-Centered Sensing Using mmWave Radars Prof. Rong Zheng McMaster University, Canada |
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10:50-12:20 - Room Atlas I

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| S10 Antennas and related Topics 4 Chairs <i>Dr. George Shaker</i> <i>Dr. M. Kanjaa</i> | Impact of Phase Optimization on the Cascade Channel and System Performance of RIS-Assisted Wireless Networks <i>Abdelghafour Abraray; Sherif Adeshina Busari; Keivan Kaboutari; Jonathan Rodriguez; Stanislav Maslovski</i> Low-Profile Antenna Sensor Design and Implementation for Liquid Sensing Applications at 2.45GHz and 6.4GHz <i>Lamia M Khashan, Tahia Mostafa and Marwan Osama</i> Optically Transparent 4-Port UWB Antenna for MIMO Applications <i>Rabia Yahya; Haosen Yin, David Bertuch and Amal El-Ghazaly</i> Dual-Band MIMO Monopole Antenna for 4G and 5G Mobile Communication Devices <i>Mohamed BA; Pape W Sarr; Aminata Diop; Ibra Dioum</i> |
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10:50-13:40 - Room Atlas II


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| Tutorial 3 10:50-12:50 Chair: Prof. S. EL Ghazaly |  | How to Write a Paper for IEEE Journals and Navigate the Review Process Prof. George E. Ponchak NASA Glenn Research Center, USA |
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12:20-13:40 - Room Atlas IV

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| S11 Antennas and related Topics 5 Chairs <i>Prof. Ali Gharsallah</i> <i>Prof. Ibra Dioum</i> | Design and Study of a Bi-Band Antenna for WLAN and WiMAX Applications <i>Souadou Malainine; Hanane Nasraoui; Jamal El Aoufi; Mustapha Kchikach</i> A 2.4GHz Electrically Small Antenna for IoT Terminals <i>Mahmoud Abdallah; Al P. Freundorfer; Yahia Antar</i> A Circularly Polarized Low-Cost IoT Electrically Small Antenna <i>Mahmoud Abdallah; Al P. Freundorfer; Yahia Antar</i> Characterization of Microwave Magneto-Dielectric Antenna Incorporating Yttrium Iron Garnet <i>Rheyuniarto Sahlendir Asthan; Trasma Yunita; Tutun Juhana and Achmad Munir</i> |
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| 13:40 -14:30 | Lunch |
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14:30-15:15 - Room Atlas III

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| Plenary Talk | | |
| KN11 14:30-15:15 Chair <i>Prof. Aly Fathy</i> |  | Key Technological Innovations for Next Generation (Terrestrial/ Submarine) Optical Transport Networks Dr. Hatem Abdelkader MITRE Corporation, USA |

15:15-16:30 – Room Atlas III

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| Closing & Awards Ceremony |
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