



Dr. IMEN SALAH MASSOUDI

ASSISTANT PROFESSOR

Personal Data

Nationality | Tunisian

Date of Birth | 10 January 1983

Department | Physics

Official IAU Email | ismassoudi@iau.edu.sa

Office Phone No. | 37479

Mobile Number No. | 0535915799 or 0509535644

Language Proficiency

| Language | Read | Write | Speak |
|----------|------|-------|-------|
| Arabic | √ | √ | √ |
| English | √ | √ | √ |
| Others | √ | √ | √ |

Academic Qualifications (Beginning with the most recent)

| Date | Academic Degree | Place of Issue | Address |
|------|-----------------|------------------------|--|
| 2013 | PhD | University of Monastir | University of Monastir- 5000 Monastir- Tunisia |
| 2008 | Master | University of Monastir | University of Monastir- 5000 Monastir- Tunisia |
| 2006 | Bachelor | University of Monastir | University of Monastir- 5000 Monastir- Tunisia |

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

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|--------|---|
| PhD | Optical Characterization by <i>In Situ</i> Spectral Reflectance III-V Semiconductors Grown by MOVPE |
| Master | Study of <i>In Situ</i> Multi-Wavelength Reflectance of InGaAs Semiconductors Grown by MOVPE |

Professional Record: (Beginning with the most recent)

| Job Rank | Place and Address of Work | | | Date |
|------------------------------------|---|--|---------|------------------|
| Researcher and Assistant Professor | College of Sciences | Imam Abdulrahman Bin Faisal University | KSA | From 15 Sep 2014 |
| Researcher and Assistant Professor | Preparatory Institute for Engineering Studies, EL Manar | University of Tunis - EL Manar | Tunisia | 2013-2014 |



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|--------------------------|---|--------------------------------|---------|-----------|
| Researcher and Assistant | Preparatory Institute for Engineering Studies, EL Manar | University of Tunis - EL Manar | Tunisia | 2009-2013 |
| Researcher and Assistant | Faculty of Sciences of Gabes | University of Gabes | Tunisia | 2008-2009 |

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 | I. Massoudi, M. M. Habchi, A. Rebey, B. El Jani | Optical and morphological study of misoriented GaAs substrates exposed to bismuth flow using in situ spectral reflectance and atomic force microscopy | Journal of Crystal Growth 353 (2012) 77 |
| 2 | I. Massoudi, M. M. Habchi, A. Rebey, B. El Jani | Study of surface roughness using in situ spectral reflectance measurements recorded during the MOVPE of InAs/GaAs heterostructures | Physica E: Low-dimensional Systems and Nanostructures 44 (2012) 1282 |
| 3 | I. Massoudi, M. M. Habchi, A. Rebey, B. El Jani | In situ spectral reflectance investigation of InAs/GaAs heterostructure grown by MOVPE | Journal of ELECTRONIC MATERIALS, Vol. 41, No. 3, 2012 |
| 4 | M. M. Habchi, I. Massoudi, A. Rebey, B. El Jani | Analysis of VIS-NIR spectral reflectance of Bi/GaAs structures grown by MOVPE and UHVE | Journal of Crystal Growth 395 (2014) 30 |
| 5 | M. Salem · S. Akir · I. Massoudi · Y. Litaïem · M. Gaidi5 · K. Khirouni1 | Enhanced photoelectrochemical and optical performance of ZnO films tuned by Cr doping | Appl. Phys. A (2017) 123-243 |
| 6 | M. Salem , I. Massoudi , S. Akir , Y. Litaïem , M. Gaidi , K. Khirouni | Photoelectrochemical and optoelectronic properties tuning of ZnO films: Effect of Cu doping content | Journal of Alloys and Compounds 722 (2017) 313-320 |
| 7 | M. Salem, I. Massoudi , Munirah A. Almessiere, Amal L. Al-Otaibi, Nada M. Alghamdi , M. Gaidi , M. A. El Khakani , K. Khirouni | Structural, morphological and optoelectronic properties of porous silicon combined alumina coating film deposited by PLD | J Mater Sci: Mater Electron s10854- (2017) -7470-9 |
| 8 | Taher Ghrib, Amal Lfy Al-Otaibi, Munirah Abdullah Almessiere, Amel Ashahri, Imen Masoudi | Structural, optical and thermal properties of the Ce doped YAG synthesized by solid state reaction method | Thermochimica Acta 654 (2017) 35–39 |
| 9 | Munirah A. Almessiere, Naser M. Ahmed, I. Massoudi, Amal L. Al-Otaibia, Amal A. Alshehria, M. Al Shafouri | Study of the structural and luminescent properties of Ce ³⁺ and Eu ³⁺ co-doped YAG synthesized by solid state reaction | Optik 158 (2018) 152–163 |
| 10 | M. Salem , S. Akir , I. Massoudi , Y. Litaïem , M. Gaidi, K. Khirouni | Photoelectrochemical and optical properties tuning of graphene-ZnO nanocomposites | Journal of Alloys and Compounds 767 (2018) 982-987 |



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| ١١ | M. Gaidi, M. Salem, S. Akir, I. Massoudi , T. Ghrib, Y. Litaïem, K. Khirouni | ZnO and carbon nanocomposites for enhanced photoelectrochemical sensing activity: influence of the carbon content | Journal of Solid State Electrochemistry 4 (2018) 4062- |
| ١٢ | Amal L. Al-Otaibi, Taher Ghrib, Mody Alqahtani, Mody A. Alharbi, Ridha Hamdi, Imen Massoudi | Structural, optical and photocatalytic studies of Zn doped MoO ₃ nanobelts | Chemical Physics Volume 525, (2019) 110410 |
| ١٣ | I. Massoudi and A. Rebey | Analysis of in situ thin films epitaxy by reflectance spectroscopy: Effect of growth parameters | Superlattices and Microstructures 131 (2019) 66–85 |
| ١٤ | Imen Massoudi ^{1,2} , Taher Ghrib ^{1,2} , * Amal L. Al-Otaibi ^{1,2} , Kawther Al-Hamad ^{1,2} , Shadih Al-Malky ^{1,2} , Maha Al-Otaibi ^{1,2} , Mariam Al-Yatimi ^{1,2} . | Structural, optical and photocatalytic properties of yttrium-doped zinc oxide | under review Chemical Physics Journal |
| ١٥ | Taher Ghrib ^{1,2} , *, Imen Massoudi ^{1,2} , Amal L. Al-Otaibi ^{1,2} , Amal Al-Malki ² , Aya Kharm ² , Eman Al-Hashem ² , Rawan A. Al-Ghamdi ² , Ruba A. Al-Zuraie ² | Effects of terbium doping on structural, optical and photocatalytic properties of ZnO nanostructures prepared by solid state reaction | under review Physica B |
| ١٦ | | | |
| ١٧ | | | |

Researches Project

| # | Research Title | Name of Investigator(s) |
|---|--|--|
| 1 | Advances in the Surface Passivation of silicon for efficiency improvement of silicon solar cells | Main investigator: Imen Massoudi Co-Investigator: Taher Hcin Ghrib , Munerah Abdullah Almessiere, Amal Lafy Alotiaibi Research Assistant : Nada Mohammad Alghamdi |

Contribution to Scientific Conferences and Symposia

| # | Conference Title | Place and Date of the Conference | Extent of Contribution |
|---|--|----------------------------------|---|
| 1 | First Euro-Mediterranean Meeting on Functionalized Materials: EMM-FM 2011, Sousse (Tunisia), 17-21 November 2011 | Tunisia | In situ monitoring of metalorganic vapor phase epitaxy of III-V semiconductors by spectral reflectance, Poster |
| 2 | The First International Conference on “Research to Applications & Markets», Monastir (Tunisia), 23-25 June 2011 | France | Effect of bismuth flow on optical properties of InAs layers grown by MOVPE, Oral |



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| 3 | European Materials Research Sciences: E-MRS 2011 Spring & Bilateral Meeting, Nice (France), 09-13 May 2011 | France | Interruption of bismuth flow effect on spectral reflectance of InAs/GaAs structure grown by MOVPE, Poster |
| 4 | European Materials Research Sciences: E-MRS 2011 Spring & Bilateral Meeting, Nice (France), 09-13 May 2011. | France | Properties of misoriented GaAs substrates annealed under bismuth flow in atmospheric pressure metal–organic vapor phase epitaxy reactor, , Poster |
| 5 | International Conference on Nano-Materials and Renewable Energies ICNMRE, Safi (Morocco), 5-8 July 2010. | Morocco | In situ monitoring of surface roughness during the growth of InAs/GaAs heterostructure by metal organic vapor phase epitaxy (MOVPE), , Poster |
| 6 | National Conference on MATERIALS 2010, Mahdia (Tunisia), 04-07 November 2010. | Tunisia | In situ spectral reflectance of misoriented GaAs annealed under bismuth flow, Poster |
| 7 | European Materials Research Society, E-MRS Spring Meeting, Strasbourg (France), 08-12 June 2009. | France | Buffer layer effect on InAs layers grown by Metalorganic Vapor Phase Epitaxy, Poster |
| 8 | 9 th National Research Conference In Physics, Yasmine-Hammamet (Tunisia), 17-20 mars 2008. | Tunisia | Use of the multi-wave reflectivity for the growth of InGaAs layers by MOVPE, Poster |
| 9 | First School of Advanced Physics in the Maghreb (EPAM 2009): | Tunisia | "Nanophysics and Nanomaterials" , Oral |
| 10 | Summer University of Science | Tunisia | Experimental Physics |
| 11 | Tunisian Association for Research Teaching | Tunisia | "Pedagogic Communication Techniques" , Oral |

Honors and awards

| # | Honors/ Award name | Donor | Date |
|---|--|-------------------------------|-------------|
| 1 | Tunisian National Award in Fundamental Physics | Tunisian Associate of Physics | 30 Jun 2006 |

Membership of Scientific and Professional Societies and Organizations

- Tunisian Society of Physics

Teaching Activities

Undergraduate

| # | Course/Rotation Title | No./Code | Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics) |
|---|-------------------------------|------------|--|
| 1 | Physics I | PHYS201 | Coordinator and Course instructor |
| 2 | General Physics 1 | PHY101 | instructor |
| 3 | General Physics 3 | PHY201 | Tutorial and Lectures Instructor |
| 4 | Mechanics and Fluid Mechanics | in Tunisia | Coordinator and Course instructor |



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| 5 | General Physics I | in Tunisia | Coordinator and Course instructor |
| 6 | General Physics II | in Tunisia | Course instructor |

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

| | |
|---|---|
| 1 | Physics I- PHYS201: Newton's Law, Mechanics, Heat, Fluid Mechanics, Properties of Matter, Geometrical Optics, Interference and Diffraction, Electric Circuits, Electricity and Magnetism,... |
| 2 | General Physics 1- PHY101: Mechanics, Heat, Fluid Mechanics, Properties of Matter,... |
| 3 | General Physics 3- PHY201: Vibrations, Waves and standard waves, superposition, characteristics of sound waves, Doppler effect, temperature, heat, first law of thermodynamics,... |
| 4 | Mechanics and Fluid Mechanics: Newtonian mechanics, Fluid mechanics, Kinetic gas theory,... |
| 5 | General Physics I: Mathematical methods of physics, Calculus-based introduction to the classical mechanics of particles and systems, kinematics, Laws of motion, Conservation principles, Rotational dynamics, Oscillator |
| 6 | General Physics II: Electrostatics, Magneto-static, Optics, Thermodynamic,... |

Postgraduate

| # | Course/Rotation Title | No./Code | Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics) |
|----|--|--------------------|---|
| 1 | Modern Physics | PHY204 | Coordinator and instructor |
| 2 | Optics | PHY203 | Coordinator and instructor |
| 3 | Waves and Vibration | PHY208 | Coordinator and instructor |
| 4 | Selected Topics in Physics | PHY 410N | Coordinator and instructor |
| 5 | Waves and Vibrations- (old phys. plan) | PHY-old phys. plan | Course and instructor |
| 6 | Seminar | PHY412 | Course and instructor |
| 7 | Practical Physics 2 | PHY427 | Course instructor : 2 experiences |
| 8 | Optics and Light Propagation | in Tunisia | Coordinator / Course instructor |
| 9 | Electrodynamics | in Tunisia | Coordinator |
| 10 | Directed Works in Physics | in Tunisia | Coordinator |

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

| | |
|---|--|
| 1 | Modern Physics - PHY204 : Compton effect , photo electric effect, duality characteristic of light, classical physics theory, relative theory and introduction to quantum mechanics ,... |
| 2 | Optics - PHY203 : Nature of light and Geometrical optics,... |
| 3 | Waves - PHY208 : Basic properties of the waves such as velocity, energy, intensity, and frequency, oscillators, superposition of different type of waves, constructive and destructive interferences,... |
| 4 | Waves and Vibrations- : (old Plan) Basic properties of the waves such as velocity, energy, intensity, and frequency, oscillators, superposition of different type of waves, constructive and destructive interferences,... |
| 5 | Seminar-PHY412 : Different research topics in physics discussed with students during the whole of the term, and then students will present a final project in each one of the chosen topics,... |
| 6 | Practical Physics 2- PHY427: 10 experiments in electricity and magnetism, quantum and nuclear physics, solid state physics and classical mechanics,... |
| 7 | Optics and Light Propagation : Ray propagation through optical components, Gaussian beam propagation, Polarization of light, Diffraction, Interference phenomenon,... |
| 7 | Electrodynamics : Electrostatics and magneto-statics in vacuum and in matter, electromagnetic induction, force and energy in electrodynamics, Maxwell's equations, Propagation of electromagnetic plane waves,... |
| 8 | Directed Works in Physics : Applied Numerical Analysis in Physics and Mathematical Methods in Physics,... |

Course Coordination



| # | Course Title and Code | Coordination | Co-coordination | Undergrad. | Postgrad. | From | to |
|---|------------------------------|-------------------|-----------------|------------|-----------|----------|-------------|
| 1 | Physics I, PHYS201 | Dr. Imen MASSOUDI | | √ | | Sep 2016 | Feb 2017 |
| 2 | PHY208, Waves and Vibrations | Dr. Imen MASSOUDI | | √ | | Feb 2017 | Actual date |

Supervision of Master and/or PhD Thesis: Ongoing Research Supervision

| # | Degree Type | Title | Institution | Date |
|---|-------------|---|--|-----------------------------|
| 1 | Master | Synthesize and Characterization of Rare-Earth Effect on YAG Phosphor for Conversion Blue Light to White Light | (Master Student : Amal Al-Shahri) College of Science – Imam Abdulrahman Bin Faisal University | 2017-2018 |
| 2 | Master | Improvement of Bismuth Incorporation into InAs Thin Films grown by MOCVD for Solar Cells Applications | (Master Student : Hessa Al Abdan) College of Science – Imam Abdulrahman Bin Faisal University | From 2018 up to actual date |

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

Committee Membership

| # | From | To | Position | Organization |
|---|----------|-------------|------------------------|---|
| 1 | Jan 2018 | Actual date | President | Examining Committee |
| 2 | Sep 2017 | Jan 2018 | Coordinator | Electronic courses unity, Physics Department |
| 3 | Feb 2017 | June 2017 | President of committee | Security and Safety Committee, Physics Department |
| 4 | Sep 2015 | June 2017 | Coordinator | The Development of Physics Program Committee |
| 5 | Sep 2015 | June 2016 | Member | The Academic Advising committee |
| 6 | Jan 2015 | June 2015 | Coordinator | The Department Research Committee |
| 7 | Sep 2014 | Jan 2015 | Member | The Department Examining Committee |

Mentorship in Academic Programs

| # | From | To | Institute | Academic Program |
|---|--------------|--------------|--|---|
| 1 | 07 Jun 2015 | 09 July 2015 | Imam Abdulrahman Bin Faisal University | Saudi Aramco Research Science Institute SA-RSI 2015 |
| 2 | 17 July 2016 | 20 Aug 2016 | Imam Abdulrahman Bin Faisal University | Saudi Aramco Research Science Institute SA-RSI 2016 |

Volunteer Work

| # | From | To | Type of Volunteer | Organization |
|---|---------------|--------------|--------------------|--|
| 1 | 10/6 /1436 H. | 13/6/1436 H. | Member of the Jury | The Sixth Scientific Conference for Students of Higher Education, Kingdom of |



| | | | | |
|--|--|--|--|--------------|
| | | | | Saudi Arabia |
|--|--|--|--|--------------|

Awards under community service activities

| # | Honors/ Award name | Donor | Events |
|---|--|---|------------------------------|
| 1 | Most Outstanding Exhibit in computer science, Engineering, Physics and chemistry | YALE SCIENCE & ENGINEERING ASSOCIATION, INC - USA | National Olympiad 2018 (KSA) |

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

| | |
|---|--|
| 1 | User of Microsoft Office (Word, Excel, Access, Power Point), Origin, Winelli, etc. |
| 2 | Programmer of MATLAB |

Last Update

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