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COMPETENCES DOMAINES

Education: Teaching Physics and chemistry for university, college and high school levels: Classical and quantum mechanics, thermodynamic, nuclear physics relativity, wave and vibration, semi-conductor, optics and optoelectronic, physics of solid, Matter and light interaction, physical and chemical matter synthesis

Physics of material:

- ❖ Electronic and structural properties, interaction material-radiation, synchrotron radiation, semi-conductor, catalysis, electro-optic wave-guide...
- ❖ Material: Nanomaterials for energy (Si, mc-Si, TCO), thin films elaborated by the CVD-Pyrosol process, Plasma Pulsed laser deposition, Nano-materials, polymer, photonic material...
- ❖ Microfabrication and characterization of Photonic Material and Tuneable active Wave-guide for new generations of optical Telecommunication compounds: photolithography, etching, optical test...

X ray radiation analysis:

- ***XAFS (X-ray Absorption Fine structure)***
 - ❖ Analysis per XAS (EXAFS et XANES):
 - ❖ Use synchrotron radiation tunnel « Third generation (ESRF-France).
 - ❖ ***X ray diffraction on thin films and powders***
 - ❖ ***Wide Angle X ray Scattering (WAXS) for the analysis of non crystallised material and liquid solution***
- ***X-ray Photoelectron Spectroscopy (XPS)***

Electronic Microscopy (TEM-SEM):

- ❖ Conventional: structural and topological analysis, electronic diffraction.
- ❖ Energy Electron loss Spectroscopy (EELS): Chemical analysis, structural and electronic (ELNES, EXELFS).

PROFESSIONAL EXPERIENCE

September 2022: Head of the Department of Applied Physics and Astronomy, University of Sharjah, UAE.
July 2017: Professor, department of applied physics and astronomy, University of Sharjah, UAE.

2014-2017: Associate professor, department of applied physics and astronomy, University of Sharjah, UAE.

August 2013-January 2014: Head of General Education department, Emirates College of Technology, Abu Dhabi, United Arab Emirates

September 2012- January 2014: Associate professor, Emirates College of Technology, Abu Dhabi, United Arab Emirates

Mai 2010-September 2012: Associate professor at the Research and Technology Centre of Energy, Borj Cedria Technopole, Tunisia

2006-2009: Assistant professor of physics at the Faculty of science of Bizerte – Tunisia

2005-2006 **Researcher- the photonic group** at Adtek PhotomaskInc (Montreal-Canada)

2001-2005 **Associate Researcher** at the National Institute of Scientific Research (Varenes – Canada)

2000-2001 **Postdoctoral research scientist** at the Centre of Material Elaboration and Structural Studies (CEMES), laboratory attached to Centre National de Recherche Scientifique (Toulouse-France).

1996-1998 **Lecture** at the national institute of polytechnic of Grenoble (France)

EDUCATION

2010 Diploma of university habilitation (physics), Tunisia

1996 - 1999: Doctorate (Ph.D. thesis) in physics (material sciences) at the National Institute of polytechnic (Grenoble-France), *the highest level: with felicitations.*

Subject: thin films of tin dioxide doped platinum or palladium and used as gas sensors: *in situ* analysis of the correlation between the electrical reply and the behavior of the metallic aggregates.

1996: DEA (Diploma of Advanced Studies) in physics, University JOSEF FOURRIER, Grenoble, France.

1995: Bachelor's in chemical physics, faculty of Sciences, University of Monastir, Tunisia.

TRAINING AND WORKSHOP PARTICIPATION

2016: Workshop, Advanced Materials, Qatar University, 2-3 Mai

2015: Workshop, **Administrative rules and regulations training sessions**, University of Sharjah, Sharjah (UAE)

2013: Workshop, **Presentation skills**, Emirates College of Technology ECT, Abu Dhabi (UAE)

2012: Workshop, **Strategic planning**, ECT 2012, Abu Dhabi (UAE)

2012: Workshop, **Effective learning**, ECT 2012, Abu Dhabi (UAE)

1998: Workshop, **The Higher European Research course for users of Large Experimental Systems in the ESRF (European Synchrotron Radiation Facilities)**, Grenoble-France.

1995: Training course in the Tunisian company for chemical production

STUDENTS SUPERVISION

- Nadia Janene: **PhD in condensed materials science**: mc-Si passivation by dual treatment based on porous Si and TiO₂ coating (**defended April 2016**).
- Moez Salem: **PhD in Materials Sciences**: Surface Si treatment for photovoltaic applications (**defended Mars 2016**)
- 2011 - 2012, Moez Salem: **Master in physics**: Effect of Al₂O₃ passivation on the opto-electronic properties of multi crystalline Si .
- 2011 - 2012, Trabelsi Khaled: **Master's in physics**: Photocatalytic effect of TiO₂ thin films deposited by pulsed laser deposition.
- 2011 - 2012, Houda Saidi: **Master's in physics**: Optical properties of BFO thin films.
- 2007 - 2008, Anouar Hajjaji: **Master in condensed material science**: an optical and microstructural study of Pd/Pd doped tin oxide thin film.
- 2005 - 2006, Fulvio Cusimano: **Master in the science of energy and materials**: Investigation of the optical properties of BST ferroelectric thin films for magnet-optic devices and waveguide applications.
- 2005 - 2006, Marcello Ferrera: **Master's in the science of energy and materials**

UNIVERSITY AND COMMUNITY SERVICE

- Member of the Scientific Committee of Sharjah International Conference of Advanced Materials, 25-27 April 2023.
- **Workshop organisation**: 1 st Canada-UAE-Japan Workshop: Functional Materials: Synthesis, characterisation and application. University of Sharjah, 29-31 Jan 2017.
- Participation to the UOS Open Day 2016.
- Participation to the UOS Open Day 2015.
- Referee for the science competition during the Third Sharjah Science Festival (February 2014)
- Member of the applied physics Master program preparation committee.
- Head of the Department webpage committee
- Member of the Accreditation Committee of the Department of Applied Physics and Astronomy.
- Member of the Research Committee of the Department of Applied Physics and Astronomy.
- Member of the college Academic Advisory Committee of the College of Sciences.

AWARDS AND HONORS

Annual incentive award for Scientific research University of Sharjah 2017/2018

Venus International Faculty Awards-VIFA 2018

Visiting professor at the National Institute of scientific research (Quebec University-Canada). 2008, 2010 and 2011.

Visiting professor at the National Institute of polytechnic of Grenoble (France). November 2010.

Scholarship of excellence: Tunisia 1996 (Major promotion for 4 years)
Scholarship of excellence: France-Rhone Alps Region 1998
Scholarship of excellence: Industrial Fellowship NSERC – Canada 2004
PhD dissertation nominated to be among the Best 20 % of the defended thesis in France (for 1999).
Leader of many international projects collaboration

PROJECTS GRANTS

Competitive project 2023-2025,: Fabrication of emerging reusable flexible sensors for rapid, on-site quality control for food contaminants sensing with surface enhanced Raman spectroscopy (100,000 AED), funded by the University of Sharjah

Targeted Project 2020-2023: Copper-Silver Nanoparticles decorated Silicon Nanowires/TiO₂ nanocomposite for highly sensitive and fast gas/bio-sensing and water treatment applications, Funded by the University of Sharjah (196,000 AED).

Covid 19-Project 2020-2022: Development of highly sensitive and fast detection technique for Corona Virus (COVID19) based on Metal Nanoparticle decorated Silicon Nanowires/TiO₂ nanocomposite. funded by the University of Sharjah (209,000 AED)

Collaborative project 2019-2021: Development of Graphene-doped Silicon Nanowires for room temperature polluting gas sensors and air quality control (200,000 AED): funded by Sharjah research academy and the University of Sharjah.

Competitive project 2016-2018: Novel metal oxide/nanoporous composite coatings for enhancing silicon solar cells photoconversion and for high sensitivity gas sensors (80,000 AED): funded by the University of Sharjah, (2019-2021))

Seed project 2015-2016: Study of nanocomposite materials based on Al₂O₃-TiO₂/Porous Si for gas sensing and photovoltaic applications.

Referee for the following journal

Journal of Lightwave technology

Sensors and Actuators

Material letters

International Journal of Biochemistry and Biotechnology

Journal of Materials Science: Materials in Electronics

Journal of Nanostructure in Chemistry

Journal of semi-conductor science technology

Ceramics International Journal

Nano Journal

Materials Science in Semiconductor Processing

Super lattices and microstructures

Nanotechnology
Material research express

Editorial Board of:

- ✓ The international journal on advances on systems and measurements.
- ✓ Madridge Journal of Nanotechnology & Nanoscience
- ✓ SCIREA Journal of Materials

Member of the program committees of:

- ✓ Sensors devices conference
- ✓ International Renewable Energy Congress (IREC-2018)
- ✓ Advisory Committee Chair for The 3rd International Conference on Green Energy and Environmental Engineering
- ✓ Scientific committee for Tunisia-Japan Symposium 2014 R&D on Energy and Materials Science for Sustainable Society

LANGUAGES

Arabic, English, French

COMPUTER EXPERIENCE

PC, Mac, Office (Word, Excel, PowerPoint), Windows, PhotoShop, Kaleida-graph, origin
Scientific programs: EXAFS, Gatan ELP, LAXS, Casa XPS, Femlab, optiwave, ...

Publications

1. **M. Gaidi**, M. Labeau, B. Chenevier and J. L. Hazemann
In-situ EXAFS Investigation of the Catalyst role of Metallic Nanoparticles
Selected ESRF HighLights 1996/1997, 83-84.
2. **M. Gaidi**, M. Labeau, B. Chenevier and J. L. Hazemann
In-situ EXAFS Analysis of the Local Environment of Pt Particles Incorporated in
Thin Films of SnO₂ Semi-Conductor oxide used as gas-sensors.
Sensors and Actuators B48 (1998) 277-284.
3. I. Matko, **M. Gaidi**, J. L. Hazemann, B. Chenevier and M. Labeau
Electrical properties under polluting gas (CO) of Pt and Pd doped polycrystalline SnO₂ thin
films : Analysis of the metal aggregate size effect.
Sensors and Actuators. B59 n° 2-3 (1999) 210-225.
4. **M. Gaidi**, B. Chenevier and M. Labeau
Electrical properties evolution under reducing gaseous mixtures (H₂, H₂S, CO) of

- SnO₂ thin films doped with Pd/Pt aggregates and used as polluting gas sensors.
Sensors and actuators B62 n°1 (2000) 43-50.
5. **M. Gaidi**, J. L. Hazemann, I. Matko, B. Chenevier, M. N. Rumyantseva, A. M. Gaskov, and M. Labeau, Role of Pt Aggregates in Pt/SnO₂ thin Films Used as Gas Sensors : Investigations of the Catalytic Effect. *Journal of the Electrochemical Society*, 147 (8) (2000) 3131-3138.
 6. I. Matko, **M. Gaidi**, B. Chenevier, A. Charai , W. SaikalyandM. Labeau
Pt Doping of SnO₂ Thin Films: A Transmission Electron Microscopy Analysis of the Porosity Evolution, *Journal of the Electrochemical Society*, 149 (8) (2002), pp. H153-H158
 7. M. Kulishov, X. Daxhelet, **M. Gaidi** and M. Chaker
Electronically reconfigurable superimposed waveguide long-period grating, *J. Opt. Soc. AmerA8307* (2002), pp.1632 - 1648
 8. P. Lecante, Y. Kihn, H. Dexpert, **M. Gaidi**, O. Holderer, G. Fuchs et M. Bertucci,
Caractérisation de nano-colloïdes bimétalliques Pd-Sn par techniques de rayons X et sondes électroniques, *Journal de Physique IV (Proceedings) Vol. 12, Pr 6, July 2002*, p 481
 9. **M. Gaidi**, L. Stafford, M. Chaker, J. Margot and M. Kulishov,
Growth and patterning of strontium-titanate-oxide thin films for optical devices Applications, *MRS proceeding*, 817 (2004) L6.16.
 10. **M.Gaidi**, A. Amassian, M. Chaker, L. Martinuand M. Kulishov,
Pulsed Laser Deposition of PLZT Thin Films: Structural and Optical Characterization *Journal of applied surface science* 226/4 (2004) pp. 347-354
 11. M. Kulishov, X. Daxhelet, **M. Gaidi** and M. Chaker,
Transmission spectrum reconfigurable in a long-period gratings electrically induced in pockels type media with the help of a periodical electrode structure, *Journal of Lightwave Technology*, vol 22 n ° 3 (2004) 923-933.
 12. L. Stafford, **M. Gaidi**, M. Chaker, O. Langlois, J. Margot, F. Schiettekatte and P. Wei,
"Influence of the microstructure on the sputter-etching characteristics of strontium-titanate-oxide thin films", *Appl. Phys. Letters* vol 84 n ° 14 (2004) 2500-2502.
 13. **M.Gaidi**, A. Amassian, L. Stafford, M. Chaker, L. Martinu, J. Margotand M. Kulishov,
Correlation between optical and microstructural properties of SrTiO₃ thin films grown on silicon by pulsed laser deposition, *J. Mat. Res.* Vol 20 n°1 (2005) 68-74.
 14. **M.Gaidi**, L. Stafford, M. Chaker, J. Margot M. Kulishov and R. Morandotti,
Microfabricated SrTiO₃ ridge waveguides, *Appl. Phys. Lett.* 86, 221106 (2005)

15. Paul F. Ndione, **Mounir Gaidi**, Christophe Durand, Roberto Morandotti and Mohamed Chaker, Epitaxial CBN growth for fast electro-optic tunable devices. Proc. SPIE Int. Soc. Opt. Eng. **5970**, 597011 (2005)
16. A. Amassian, **M. Gaidi**, M. Chaker and L. Martinu, Optical Depth Profiling of STO and Electro-Optic PLZT Multilayer Structures For Active Waveguide Applications, J. Vacc. Sci. Tech. A, **24** (1) (2006) 55.
17. **M. Gaidi**, M. Labeau, B. Chenevier and J. L. Hazemann
In situ simultaneous XAS and electrical characterizations of Pt-doped tin oxide thin film deposited by pyrosol method for gas sensors application, Sensors and Actuators B, pp. 313-315 (2006).
18. L. Stafford, O. Langlois, J. Margot, **M. Gaidi** and M. Chaker,
Influence of the positive ion composition on the ion-assisted chemical etch yield of SrTiO₃ films in Ar/SF₆ plasmas, Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films 25 (3), pp. 425-431 (2007)
19. A. Missaoui, L. Beji, **M. Gaidi**, Z. Harrabi, H.B. Ouada, A. Bouazizi,
Structural characterisation of CdS layers deposited on porous p-type GaAs, Microelectronics Journal 38 (1), pp. 96-101 (2007)
20. **M. Gaidi**, M. Chaker, P.F. Ndione, R. Morandotti, B. Bessais,
Microstructural and optical properties of Ba_{0.5}Sr_{0.5}TiO₃ thin film deposited by pulsed laser deposition for low loss waveguide applications, Journal of Applied Physics 101 (6), art. no. 063107 (2007).
21. Ferrera, M., Helsten, R., Razzari, L., Ndione, P.-F., **Gaidi, M.**, Chaker, M., Morandotti, R.
Evaluation of the electro-optic response of novel calcium barium niobate thin films (2007)
Conference Proceedings of the International Symposium on Signals, Systems and Electronics, art. no. 4294517., ISSSE '07, pp 479-480 (2007).
22. R. Helsten, L. Razzari, M. Ferrera, P. F. Ndione, **M. Gaidi**, C. Durand, M. Chaker and R. Morandotti, Pockels Response in Calcium Barium Niobate Thin Films, Appl. Phys. Lett. 91, 261101 (2007).
23. Missaoui, A., Beji, L., Gaidi, M., Bouazizi, A.
Study of band-edge emission in CdS layers grown on p-type porous GaAs substrates (2007)
ICTON-MW'07 - International Conference on Transparent Optical Networks "Mediterranean Winter" 2007 - Conference Proceedings, art. no. 4446972, .

24. Paul F. Ndione, **Mounir Gaidi**, Christophe Durand, Mohamed Chaker, Roberto Morandotti and Grégory Rioux, Structural and optical properties of epitaxial $\text{Ca}_x\text{Ba}_{1-x}\text{Nb}_2\text{O}_6$ thin films grown on MgO by pulsed laser deposition, *JOURNAL OF APPLIED PHYSICS* 103, 033510 (2008).
25. Mounir Gaidi, Anouar Hajjaji, My Ali El Khakani, Brenard Chenevier, Michel Labeau, and Brahim Bessais, Optical Properties Tuning of SnO_2 Films by Metal Incorporation (Pt,Pd): Correlation with Microstructure Change, *Japanese Journal of Applied Physics* 48 (2009) 072501.
26. Paul F. Ndione, Marcello Ferrera, David Duchesne, Luca Razzari, **Mounir Gaidi**, Mohamed Chaker and Roberto Morandotti, Hybrid integration of $\text{Ca}_{0.28}\text{Ba}_{0.72}\text{Nb}_2\text{O}_6$ thin film electro-optic waveguides with silica/silicon substrates, *Optics express* 17 n°17 (2009) 15128.
27. A. Labidi, **M. Gaidi**, J. Guérin, A. Bejaoui, M. Maaref and K. Aguir, Alternating current investigation and modeling of the temperature and ozone effects on the grains and the grain boundary contributions to the WO_3 sensor responses, *Thin Solid Films*, Volume 518, Issue 1, 2 November 2009, Pages 355-361.
28. **M. Gaidi**, A. Hajjaji, R. Smirani, B. Bessais and M.A. El Khakani, Structure and photoluminescence of ultrathin films of SnO_2 nanoparticles synthesized by means of pulsed laser deposition, *Journal of Applied Physics* 108 (2010) 063537.
29. M. Ben Rabha, S. B. Mohamed, W. Dimassi, **M. Gaidi**, H. Ezzaouia and B. Bessais, Optoelectronic enhancement of monocrystalline silicon solar cells by porous silicon-assisted mechanical grooving, *physica status solidi (c)*, 8 (2011) 887–890.
30. M. Ghrib, **M. Gaidi**, T. Ghrib, N. Khedher, M. Ben Salam, H. Ezzaouia, Morphological and optical properties changes in nanocrystalline Si (nc-Si) deposited on porous aluminum nanostructures by plasma enhanced chemical vapor deposition for Solar energy applications *Applied Surface Science*, Volume 257, Issue 21, 15 August 2011, Pages 9129-9134
31. A. Hajjaji, **M. Gaidi**, B. Bessais, M.A.E. Khakani, Effect of Cr incorporation on the structural and optoelectronic properties of $\text{TiO}_2\text{:Cr}$ deposited by means of a magnetron co-sputtering process, *Applied Surface Science*, 257 (24), (2011) pp. 10351-10357.
32. A. Labidi, A. Bejaoui, H. Ouali, F. Chaffar Akkari, A. Hajjaji, **M. Gaidi**, M. Kanzari, B. Bessais, M. Maaref, Dry air effects on the copper oxides sensitive layers formation for ethanol vapor detection, *Applied Surface Science*, Volume 257, Issue 23, 15 September 2011, Pages 9941-9945

33. Ben Naceur, J., **Gaidi, M.**, Bousbih, F., Mechiakh, R., Chtourou, R., Annealing effects on microstructural and optical properties of Nanostructured-TiO₂ thin films prepared by sol-gel technique, *Current Applied Physics*, 12 (2), (2012) pp. 422-428.
34. M. Ghrib, **M. Gaidi**, N. Khedher, T. Ghrib, M. Ben Salem, H. Ezzaouia, Structural and optical properties study of nanocrystalline Si (nc-Si) thin films deposited on porous aluminum by plasma enhanced chemical vapor deposition , *Applied Surface Science*, Volume 257, Issue 9, 15 February 2011, Pages 3998-4003.
35. Rabha, M.B., Dimassi, W., **Gaidi, M.**, Ezzaouia, H., Bessais, B., *Combination of silicon nitride and porous silicon induced optoelectronic features enhancement of multicrystalline silicon solar cells*, *Physica Status Solidi (C) Current Topics in Solid State Physics*, 8 (6), (2011) pp. 1874-1877.
36. Ben Rabha, M., Mohamed, S.B., Dimassi, W., **Gaidi, M.**, Ezzaouia, H., Bessais, B., *Reduction of absorption loss in multicrystalline silicon via combination of mechanical grooving and porous silicon*, *Physica Status Solidi (C) Current Topics in Solid State Physics*, 8 (3), (2011) pp. 883-886.
37. Ben Rabha, M., Mohamed, S.B., Dimassi, W., **Gaidi, M.**, Ezzaouia, H., Bessais, B., *Optoelectronic enhancement of monocrystalline silicon solar cells by porous silicon-assisted mechanical grooving*, *Physica Status Solidi (C) Current Topics in Solid State Physics*, 8 (3), (2011) pp. 887-890.
38. A. Hajjaji, A. Labidi, M. **Gaidi**, M. ben Rabha, B. Bessais, M.A.E . Khakani, *Structural, Optical and Sensing Properties of Cr-Doped TiO₂ Thin Films*, *Sensor Lett.* 9, (2011) 1697-1703.
39. A. Hajjaji, M. Ben Rabha, N. Janene, **M. Gaidi**, B. Bessais, M.A. El Khakani, *Minority carrier lifetime enhancement in multicrystalline silicon by means of a dual treatment based on porous silicon and sputter-deposition of TiO₂:Cr passivation layers*, *Applied Surface Science*, Volume 258, Issue 20, 1 August 2012, 8046–8048.
40. A. Hajjaji , M. Ben Rabha, N. Janene , W. Dimassi , B. Bessais, M. A. El Khakani, **M. Gaidi**,
Effect of dual treatment based on porous silicon and sputter-deposited TiO₂ doped Cr film on the optoelectronic properties of monocrystalline Si, *Sci. Lett. J.* 2012, 1: 12
41. N. Janene, A. Hajjaji, M. Ben Rabha, B. Bessais, M. A. El Khakani, **M. Gaidi**,
Effect of double treatment based on porous Si and TiO₂ passivation on the optoelectronic properties of multicrystalline silicon substrates, *Sci. Lett. J.* 2012, 1: 13
42. [M. Ben Rabha, S. Belhadj Mohamed, A. Hajjaji, W. Dimassi, M. Hajji, S. Aouida, **M. Gaidi**, M. Bouaicha, and B. Bessais, *Minority carrier lifetime enhancement in multicrystalline silicon*, *The European Physical Journal Applied Physics* 57-2 (2012) 21302.

43. M. Ben Rabha, M. Hajji, S. Belhadj Mohamed, A. Hajjaji, **M. Gaidi**, H. Ezzaouia, and B. Bessais, Stain-etched porous silicon nanostructures for multicrystalline silicon-based solar cells, *Eur. Phys. J. Appl. Phys.* (2012) 57: 21301
44. M. Jaouadi, W. Dimassi, **M. Gaidi**, R. Chtourou, H. Ezzaouia, Nanoporous silicon membrane for fuel cells realized by electrochemical etching, *Applied Surface Science, Volume 258, Issue 15, 15 May 2012, Pages 5654-5658.*
45. M. Ben Rabha, M. Salem, M.A. El Khakani, B. Bessais, **M. Gaidi**, Monocrystalline silicon surface passivation by Al₂O₃/porous silicon combined treatment, *Materials Science and Engineering: B, Volume 178, Issue 9, 15 May 2013, Pages 695-697.*
46. N. Janene, A. Hajjaji, M. Ben Rabha, M. A. El Khakani, B. Bessais, and **M. Gaidi**, Influence of porous silicon passivation layer and TiO₂ coating on the optoelectronic properties of multicrystalline Si substrate, *Phys. Status Solidi C, 1–4 (2012) 2141–2144.*
47. M. Jaouadi, **M. Gaidi**, H. Ezzaouia, Effect of LiBr pore-filling on morphological, optical and electrical properties of porous silicon membrane, *Superlattices and Microstructures, Volume 54, February 2013, Pages 172-180.*
48. M. Salem, M. Ben Rabha, B. Bessais, M.A. Elkhakani, **M. Gaidi**, Novel silicon surface passivation by porous silicon combined with an ultrathin Al₂O₃ film. *Journal of Materials Science: Materials in Electronics, 24-12 (2013) 5035-5039.*
49. W. Zaghdoudi, **M. Gaidi**, and R. Chtourou, Microstructural and Optical Properties of Porous Alumina Elaborated on Glass Substrate, *Journal of Materials Engineering and Performance, March 2013, Volume 22, Issue 3, pp 869-874.*
50. Anouar Hajjaji, Ater Atyaoui, Khaled Trabelsi, Mosbah Amlouk, Latifa Bousselmi, Brahim Bessais, My Ali El Khakani and **Mounir Gaidi**, Cr-Doped TiO₂ Thin Films Prepared by Means of a Magnetron Co-Sputtering Process: Photocatalytic Application, *American Journal of Analytical Chemistry, 2014, 5, 473-482.*
51. M. Naouar, I. Ka, **M. Gaidi**, H. Alawadhi, B. Bessais, M.A. El Khakani, Growth, structural and optoelectronic properties tuning of nitrogen-doped ZnO thin films synthesized by means of reactive pulsed laser deposition, *Materials Research Bulletin 57 (2014) 47–51.*
52. Moez Salem, Mondher Ghrib, Brahim Bessais, Hussain Alawadhi and **Mounir Gaidi**, Surface passivation of multicrystalline silicon wafers by porous silicon combined with an ultrathin nanoparticles aluminum coating film, *J Mater Sci: Mater Electron, 25 (2014) 4326-4332.*
53. Ghannam, H, Zakaria, O.E.H, Yamlahi Alami, Z, Addou, M, Chahboun, A, Salem, M, Gaidi, M, Simulation of hydrophobic surfaces: A case study of ZnO thin film, *Proceedings of 2014*

International Renewable and Sustainable Energy Conference, IRSEC 2014, 12 March 2014,
Article number 7059844, Pages 711-715

54. Anouar Hajjaji, Khaled Trabelsi, Atef Atyaoui, **Mounir Gaidi**, Latifa Bousselmi, Brahim Bessais, My Ali El Khakani, Photocatalytic activity of Cr-doped TiO₂ nanoparticles deposited on porous multicrystalline silicon films, *Nanoscale Research Letters* (2014), 9:543
55. N Somrani, A Maaloul, H Saidi, L Stafford, **M Gaidi**, Microstructural and optical properties tuning of BiFeO₃ thin films elaborated by magnetron sputtering, *Journal of Materials Science: Materials in Electronics* (2015) 26 (5), 3316-3323.
56. N. Janene, M. Salem, M. Ben Rabha, M. A. El Khakani, B. Bessais, H. Alawadhi, **M. Gaidi**, TiO₂/porous silicon nanocomposite passivation coating for mc-Si wafers, *Journal of Materials Science: Materials in Electronics: Volume 26, Issue 3* (2015), Page 1585-1590
57. M. Salem, Z. Yamlahi Alami, B. Bessais, A. Chahboun, M. Gaidi, Structural, optical and electrical properties of ZnO nanoparticles deposited on porous silicon substrates, *journal of nanoparticles research* March 2015, 17 (2015) 137.
58. Z.Yamlahi Alami, M. Salem, **M. Gaidi**, J. Elkhakhami, Effect Of Zn Concentration On Structural And Optical Proprieties Of Zno Thin Films Deposited By Spray Pyrolysis, *Advanced Energy: An International Journal (AEIJ)*, Vol. 2, No. 4, October 2015
59. Anis Allagui, Hussain Alawadhi, Mustafa Alkaaby, **Mounir Gaidi**, Khalid Mostafa and Yacoub Abdulaziz, Mott–Schottky analysis of flower-like ZnO microstructures with constant phase element behaviour, *PHYSICA STATUS SOLIDI (A)*, 213-1- (2016), 139-145
60. N. Janene, N. Ghrairi, A. Allagui, H. Alawadhi, M. A. El Khakani, B. Bessais, **M. Gaidi**, Optoelectronic properties of a TiO₂/PS/mc-Si heterojunction based solar cell, *Applied Surface Science*, Volume 368, 15 April 2016, Pages 140-145.
61. M. Salem, S. Akir, T. Ghrib, K. Daoudi, **M. Gaidi**, Fe-doping effect on the photoelectrochemical properties enhancement of ZnO films, *Journal of Alloys and Compounds*, Volume 685, 15 November 2016, Pages 107-113
62.] K. Trabelsi, A. Hajjaji, I. Ka, **M. Gaidi**, B. Bessais and M. A. El Khakani, Optoelectronic and photocatalytic properties of in situ platinum-doped TiO₂ films deposited by means of pulsed laser ablation technique, *Journal of Materials Science: Materials in Electronics* February 2017, Volume 28, Issue 4, pp 3317–3324.

63. M. Salem, S. Akir, I. Massoudi, Y. Litaïem, **M. Gaidi** and K. Khirouni, Enhanced photoelectrochemical and optical performance of ZnO films tuned by Cr doping, *Appl. Phys. A* (2017) 123: 243.
64. Laatar, F, Harizi, A, Ghrib, M, Hassen, M, Khirouni, K, **Gaidi, M.** and Ezzaouia, H, Rapid thermal annealing effect on the microstructural and optical properties of nc-Si embedded in porous anodic alumina, *Journal of Alloys and Compounds*, Volume 709, 30 June 2017, Pages 487-495.
65. Fakher Laatar, Afef Harizi, Ahmed Zarroug, Mondher Ghrib, Mohamed Hassen, **Mounir Gaidi** and Hatem Ezzaouia, Novel CdSe nanorods/porous anodic alumina nanocomposite-based ethanol sensor: sensitivity enhancement by visible light illumination, *Journal of Materials Science: Materials in Electronics* (2017). 28, issue 16 pp 12259–12267.
66. ZY Alami, J El Khamkhami, M Salem, **M Gaidi**, Electrical Behavior of Solar Cell based on ZnO/PS, *Transactions on Machine Learning and Artificial Intelligence*, 4 (2017) 302-309.
67. 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*, Volume 722, 25 October 2017, Pages 313-320
68. M. Salem, I. Massoudi, Munirah A. Almessiere, Amal L. Al-Otaibi, Nada M. Alghamdi, **M. Gaidi**, M. A. El Khakani and K. Khirouni, Structural, morphological and optoelectronic properties of porous silicon combined alumina coating film deposited by PLD, *Mater Sci: Mater Electron*, 28, issue 21 (2017) 15768-15774.
69. **M. Gaidi**, N. Somrani and L. Stafford, In situ investigation of magnetron sputtering plasma used for the deposition of multiferroic BiFeO₃ thin films, *Journal of Materials Science: Materials in Electronics*, 28(21), (2017) 15749-15753.
70. Kais Daoudi, Hussain Alawadhi, Saoussen El Helali, Michel Boudard, Zied Othmen, **Mounir Gaidi**, Meherzi Oueslati and Tetsuo Tsuchiya, Effects of Mn₃O₄ precipitates on the vibrational properties of epitaxial Ca-doped LaMnO₃ films, *J. Phys. D: Appl. Phys.* 50 (2017) 395305.
71. K. Trabelsi, , A. Hajjaji, **M. Gaidi**, B. Bessais, and , and M. A. El Khakani, Enhancing the photoelectrochemical response of TiO₂ nanotubes through their nanodecoration by pulsed-laser-deposited Ag nanoparticles, *Journal of Applied Physics* 122, 064503 (2017); doi: 10.1063/1.4998439.
72. Yamlahi Alami, Z. Salem, M, Gaidi, M, El Khamkhami, J, Structural, optical and electrical characterizations of ZnO/PS, [MATEC Web of Conferences](#) Volume 191, 10 August 2018, Article number 13.

73. **M Gaidi**, K Trabelsi, A Hajjaji, M L Chourou, A N Alhazaa, B Bessais and M A El Khakani, Optimizing the photochemical conversion of UV–vis light of silver-nanoparticles decorated TiO₂ nanotubes based photoanode, *Nanotechnology* 29 (2018) 015703 (8pp).
74. M.Salem, S.Akir, I.Massoudi, Y.Litaiem, **M.Gaidi** and K.Khirouni, Photoelectrochemical and optical properties tuning of graphene-ZnO nanocomposites, *Journal of Alloys and Compounds* Volume 767, 30 October 2018, Pages 982-987.
75. Sonia Ben Slama, Mondher Ghrib, Bilel Khalfallah, Messaoud Hajji, **Mounir Gaidi** and Hatem Ezzaouia, Effect of Ni nickel coated porous Si buffers layer on the structural and opto-electronic properties of silicon thin films, *Journal of Alloys and Compounds* Volume 765, 15 October 2018, Pages 1184-1194
76. **M. Gaidi**, M. Salem, S. Akir, I. Massoudi, T. Ghrib, Y. Litaiem and K. Khirouni, ZnO and carbon nanocomposites for enhanced photoelectrochemical sensing activity: influence of the carbon content, *Journal of Solid State Electrochemistry*, 22(11), 3631-3637.
77. **M. Gaidi**, Nanostructured SnO₂ thin films: Effects of porosity and catalytic metals on gas-sensing sensitivity, *Applied Physics A, Materials Science & Processing* (2018) 124: 725.
78. Charfeddine Messaadi, Taher Ghri, Jalila Jalali, Mondher Ghrib, Alanood Abdullah Alyami, **Mounir Gaidi**, Miguel Manso Silvan, Hatem Ezzaouia, Synthesis and characterization of SnO₂-TiO₂ nanocomposites photocatalyst, *Current Nanoscience* 15, 14 (2019).
79. M Soltani, ST Bah, R Karmouch, **M Gaidi**, R Vallée, Phase transition in thermochromic VO₂ coatings grown by ac dual magnetron cathode sputtering, *Journal of Materials Science: Materials in Electronics* 30 (22) 2019, 20043-20049.
80. A Hajjaji, S Jemai, K Trabelsi, A Kouki, I Ben Assaker, I Ka, **M Gaidi**, B Bessais, MA El Khakani, Study of TiO₂ nanotubes decorated with PbS nanoparticles elaborated by pulsed laser deposition: microstructural, optoelectronic and photoelectrochemical properties, *Journal of Materials Science: Materials in Electronics* 30 (24) (2019), 20935-20946.
81. A Hajjaji, A Rebhi, I Ka, K Trabelsi, **M Gaidi**, B Bessais, MA El Khakani, Pulsed-laser-deposited lead sulfide nanoparticles based decoration of porous silicon layer as an effective passivation treatment for multicrystalline silicon, *Applied Surface Science*, 55 (2020) 144590.
82. A Hajjaji, S Jemai, A Rebhi, K Trabelsi, **M Gaidi**, AN Alhazaa, MA Al-Gawati, MA El Khakani, .B Bessais, Enhancement of photocatalytic and photoelectrochemical properties of TiO₂ nanotubes sensitized by SILAR-Deposited PbS nanoparticles, *Journal of Materiomics* 6 (1) (2020) 62-69

83. Daoudi K, Gaidi M, Alawadhi H, Columbus S, Zhang D, Allagui A, Shameer M, Taieb A. Structural effects of silver-nanoprism-decorated Si nanowires on surface-enhanced Raman scattering. *Nanotechnology* 31 (2020) 255706 (8pp).
84. Kais Daoudi, **Mounir Gaidi**, Soumya Columbus, Silver nanoprisms/graphene oxide/silicon nanowires composites for R6G surface-enhanced Raman spectroscopy sensor, *Biointerface Research in Applied Chemistry*, Volume 10, Issue 3, 2020, 5670 – 5674
85. **Mounir Gaidi**, Kais Daoudi, Soumya Columbus, Anouar Hajjaji, My Ali ElKhakani, Brahim Bessais, Enhanced photocatalytic activities of silicon nanowires/graphene oxide nanocomposite: Effect of etching parameters, *Journal of Environmental Sciences* Volume 101, March 2021, Pages 123-134
86. A. Hajjaji, C. Amri, A. Rebhi, **M. Gaidi**, R. Ouertani, M. Amlouk, B. Bessais & M. A. El Khakani, Correlation between Morphological Structure and Optoelectronic Properties of Al₂O₃ thin layer coated silicon nanowires, *Silicon* (2020), <https://doi.org/10.1007/s12633-020-00730-9>
87. Snoussi, T., Ben Belkacem, H., Radwan, A.F., **Gaidi, M.** Social media for learning: perceptions and behaviors, *Periodicals of Engineering and Natural Sciences*, 2020, 8(4), pp. 2195–2207.
88. Ghrib, M., Tlili, B, Razeg, M., Ouertani, R., **Gaidi, M.**, Ezzaouia, H., Effect of Al₂O₃ decoration on the opto-electrical properties of a porous Si/Cr₂O₃ composite, *Opto-electronics Review*, 2020, 28(3), pp. 155–163.
89. **Mounir Gaidi**, Kais Daoudi, Abdelaziz Tlili, Soumya Columbus, Joël Leblanc-Lavoie, Krithikadevi Ramachandran, Bashir Suleiman, A.N. Alhazaa, M.A. El Khakani, Fast, highly sensitive and label free detection of small genetic sequences of DNA using novel Surface-Enhanced Raman Spectroscopy nanostructured sensor, *Sensing and Bio-Sensing Research* 32 (2021) 100406
90. Jannat Hammouche, **M. Gaidi**, S. Columbus & M. Omari, Enhanced Photocatalytic Performance of Zinc Ferrite Nanocomposites for Degrading Methylene Blue: Effect of Nickel Doping Concentration, *Journal of Inorganic and Organometallic Polymers and Materials* (2021) <https://doi.org/10.1007/s10904-021-01960-z>.
91. Ameni Rebhi, Anouar Hajjaji, Joël Leblanc-Lavoie, Salma Aouida, **Mounir Gaidi**, Brahim Bessais and My Ali El Khakani, Effect of the Helium Background Gas Pressure on the Structural and Optoelectronic Properties of Pulsed-Laser-Deposited PbS Thin Films, *Nanomaterials* **2021**, 11, 1254. <https://doi.org/10.3390/nano11051254>.

92. Jannat Hammouche, Kais Daoudi, Soumya Columbus, Rania Ziad, Krithikadevi Ramachandran , **Mounir Gaidi**, Structural and morphological optimization of Ni doped ZnO decorated silicon nanowires for photocatalytic degradation of methylene blue, *Inorganic Chemistry Communications* 131 (2021) 108763.
93. Krithikadevi Ramachandran, Soumya Columbus a, Siva Chidambaram, Kais Daoudi, My Ali El Khakani, **Mounir Gaidi**, Fabrication of highly oriented 1D SiNW arrays/Au for femto molar level detection of H1N1 protein, *Materials Letters* 300 (2021) 130184.
94. Kais Daoudi, Krithikadevi Ramachandran, Soumya Columbus, Abdelaziz Tlili, Mona Mahfood, My Ali El Khakani, Mounir Gaidi, Tuning the nanostructural properties of silver nanoparticles for optimized Surface-Enhanced Raman Scattering sensing of SARS COV-2 spike protein, *Adv. Nat. Sci.: Nanosci. Nanotechnol.* 12 (2021) 035011.
95. Kais Daoudi, Krithikadevi Ramachandran, Hussain Alawadhi, Rabah Boukherroub, Elhadj Dogheche, My Ali El Khakani and Mounir Gaidi, Ultra-sensitive and fast optical detection of the spike protein of the SARS-CoV-2 using AgNPs/SiNWs nanohybrid based sensors, *Surfaces and Interfaces* 27 (2021) 101454.
96. Siva Chidambaram, Krithikadevi Ramachandran , Mounir Gaidi, Kais Daoudi, and Mathan Natarajamoorthy, Solution combustion synthesis of iron tungstate nanoparticles for photoelectrochemical water splitting towards oxygen evolution, *J. Mater Sci: Mater Electron.* Oct 2021
97. Krithikadevi Ramachandran, Rania Ziad, Soumya Columbus, Kais Daoudi, Jannat Hammouche, My Ali El Khakani, Siva Chidambaram, and **Mounir Gaidi**, TiO₂/Si nanowires hybrid system for efficient photocatalytic degradation of organic dye, , *J. Mater Sci: Mater Electron.* 12/2022
98. Kais Daoudi, Mounir Gaidi, Soumya Columbus, Mohammed Shameer, Hussain Alawadhi, Hierarchically assembled silver nanoprism-graphene oxide-silicon nanowire arrays for ultrasensitive surface enhanced Raman spectroscopy sensing of atrazine, *Materials Science in Semiconductor Processing* 138 (2022) 106288
99. Krithikadevi Ramachandran , Kais Daoudi, Soumya Columbus, Siva Chidambaram, Mounir Gaidi, Green production of self-assembled silver nanoarrays on flexible substrate for direct detection and catalytic degradation of organic water pollutants, *Environmental Technology & Innovation* 27 (2022) 102409

100. Jayapriya Maruthai, Krithikadevi Ramachandran, Arulmozhi Muthukumarasamy, Siva Chidambaram, Mounir Gaidi, Kais Daoudi, Bio fabrication of 2D MgO/Ag nanocomposite for effective environmental utilization in antibacterial, anti-oxidant and catalytic applications, *Surfaces and Interfaces* 30 (2022) 101921.
101. Mondher Ghrib, Taher Ghrib, Wisem Dimassi, Mounir Gaidi, Rachid Ouertani, Hatem Ezzaouia, Correlation between microstructural and optoelectronic properties of porous Si/ SnO₂ composites coated Al₂O₃, *Optik* 258 (2022) 168900, <https://doi.org/10.1016/j.ijleo.2022.168900>
102. Bashir M. Suleiman, Heba Y. Youssef, Kais Daoudi, Zaher Aghbari, Azar A. Amani, Mounir Kaidi. Thermal Conduction: Computational Model and Engineering Applications, *Materials Science Forum*, 1053 (2022), 61-70
103. K Ramachandran, K Daoudi, M Gaidi, J Hammouche, S Chidambaram. Facile, Flexible, Fast, Highly sensitive and Low-cost paper sensor for real time spike protein sensing with SERS, *Materials Science and Engineering: B* 286 (2022), 115984
104. S Columbus, J Hammouche, K Ramachandran, K Daoudi, M Gaidi, Assessing the efficiency of photocatalytic removal of alizarin red using copper doped zinc oxide nanostructures by combining SERS optical detection, *Journal of Photochemistry and Photobiology A: Chemistry* 432, (2022) 114123.
105. K Ramachandran, K Daoudi, H.H Kacem, S Columbus, H Benaoum and Mounir Gaidi, Rapid and ultra-sensitive detection of pork DNA with surface enhanced Raman spectroscopy for onsite food quality inspection, *Sensing and Bio-Sensing Research*, 100524 (2022)
106. K Ramachandran, K Daoudi, S Columbus, A Tlili, M Gaidi, Dual phenomenon of surface plasmon and laser optics induced EM enhancement for rapid DNA detection with semiconductor nanostructures (SiNWs/AgNPs), *Journal of Physics: Conference Series* 2327 (1), 012018
107. Soumya Columbus, Abderrahmane Hamd, Krithikadevi Ramachandran, Kais Daoudi, El Hadj Dogheche, Mounir Gaidi, Rapid and ultralow level SERS detection of ethylparaben using silver nanoprisms functionalized sea urchin-like Zinc oxide nanorod arrays for food safety analysis, *Sensors and Actuators A: Physical* Volume 347, 1 November 2022, 113962
108. Krithikadevi Ramachandran, Abderrahmane Hamdi, Soumya Columbus, Nour Al Meselmene, Elhadj Dogheche, Kais Daoudi, Mounir Gaidi, Synergism induced sensitive SERS sensing to detect

- 2,6-Di-*t*-butyl-*p*-hydroxytoluene (BHT) with silver nanotriangles sensitized ZnO nanorod arrays for food security applications, *Surfaces and Interfaces* Volume 35, December 2022, 102407
109. S. Sassi, K. Trabels, iA. El Jery, M. Abidi, A. Hajjaji, L. Khezami, A. Karrech, M. Gaidi, B.M. Soucase, B. Bessais, Synergistic effect of Cu_xO_y -NPs/ TiO_2 -NTs heterostructure on the photodegradation of amido black staining, *Optik* Volume 272, February 2023, 170234
110. Kais Daoudi, Soumya Columbus, Bruno P. Falcão, Rui N. Pereira, Suzana B. Peripolli, Krithikadevi Ramachandran, Hassen Hadj Kacem, Anis Allagui, Mounir Gaidi, Label-free DNA detection using silver nanoprism decorated silicon nanoparticles: Effect of silicon nanoparticle size and doping levels *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 290 (2023) 122262.
111. Jose Ferreira de Sousa Junior, Soumya Columbus, Jannat Hammouche, Krithikadevi Ramachandran, Kais Daoudi, Mounir Gaidi, Engineered micro-pyramids functionalized with silver nanoarrays as excellent cost-effective SERS chemosensors for multi-hazardous pollutants detection *Applied Surface Science* 613 (2023) 156092.
112. M. Salem, J. Salem, H. Ghannam, I. Massoudi, F. Bourguiba, M. Gaidi, Optical and passivation properties of ZnO:Fe on silicon substrates *Journal of Materials Science: Materials in Electronics* Pub Date: 2023-01-31 , DOI:10.1007/s10854-022-09734-0
113. Rania Ziad, Soumya Columbus, Abdelaziz Elgamouz, Kais Daoudi, Abdel-Nasser Kawde, Krithikadevi Ramachandran, Mounir Gaidi, Multi-functional silver nanoprism-titanium dioxide hybrid nanoarrays for trace-level SERS sensing and photocatalytic removal of hazardous organic pollutants, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 297 (2023) 122701
114. Hassen Hadj Kacem, Krithikadevi Ramachandran, Gurukaelaiarasu Tamilarasi Mani, Soumya Columbus, Kais Daoudi, Siva Chidambaram, Bashir Suleiman, My Ali El Khakani, Mounir Gaidi, Rapid screening of Turkey DNA fingerprint using highly sensitive label free plasmonic SERS biosensor, *Surfaces and Interfaces* 40 (2023) 103141
115. Moez Salem, Hajar Ghannam, Jamel Salem, Sana Ben Moussa, Imen Massoudi and Mounir Gaidi, Effect of Cu-doped ZnO Thin Films on the Electron–Hole Pair Lifetime in Silicon Wafers, *Silicon* (2023). <https://doi.org/10.1007/s12633-023-02459-7>

116. Mohamed Shameer P , K. Vijai Anand, Soumya Columbus, Hussain Alawadhi, Kais Daoudi, Mounir Gaidi, K. Govindaraju, Highly efficient, multiplexed SERS sensing of para-aminobenzoic acid using reusable silver nanoarrays for environmental monitoring, *Materials Science & Engineering B* 295 (2023) 116576.
117. Tailoring the optical band gap of In–Sn–Zn–O (ITZO) nanostructures with co-doping process on ZnO crystal system: an experimental and theoretical validation, Nouha Mastour, Krithikadevi Ramachandran, Said Ridene, Kais Daoudi & Mounir Gaidi, *The European Physical Journal Plus* **volume 137**, Article number: 1137 (2022)
118. Hussain Alawadhi, Moza Ali Alnaqbi a, Krithikadevi Ramachandran, Soumya Columbus, Kais Daoudi, Siva Chidambaram, My Ali El Khakani, **Mounir Gaidi**, Trace-level sensing of food toxins by flexible and cost-effective SERS sensors fabricated by pulsed-laser-deposition of gold nanoparticles on polycarbonate matrix, *Surfaces and Interfaces* 40 (2023) 103016
119. Moez Salem, Hajar Ghannam, Abdullah Almohammedi, Jamel Salem, Yousra Litaïem, Imen Massoudi, Malek Gassoumi & Mounir Gaidi, Ag Doped ZnO Thin Films Deposited by Spin Coating for Silicon Surface Passivation, *Silicon* (2023). <https://doi.org/10.1007/s12633-023-02586-1>
120. M. Salem, H. Ghannam, A. Almohammedi, J. Salem, I. Rashid Bouazzi, I. Massoudi f, M. Gaidi, Improved photoelectrochemical sensitivity of Al-doped ZnO nanostructure prepared by co-precipitation and spin-coating techniques, *Materials Letters* 352 (2023) 135085
121. M. Salem, A. Rached, S. Nasr, J. Salem, I. Massoudi, Y. Litaïem and M. Gaidi, Ag doping enhancement of photoelectrochemical performance of ZnO nanoparticles, *The European Physical Journal Plus* volume 138, Article number: 746 (2023)
122. Soumya Columbus, Kais Daoudi, Krithikadevi Ramachandran, Mohamed Shameer, Hassen Hadj Kacem, Hussain Alawadhi, Mounir Gaidi, Confined assembly of size-tunable silver nanoprisms on flexible Teflon tapes as highly active SERS hotspots for ultralow-level sensing of DNA and glucose, *Sensors & Actuators: B. Chemical* 398 (2024) 134780
123. Sefeera Sadik, Soumya Columbus, Sourjya Bhattacharjee, Shaiju S. Nazeer, Krithikadevi Ramachandran, Kais Daoudi, Hussain Alawadhi, Mounir Gaidi, Abdallah Shanableh, Smart optical sensing of multiple antibiotic residues from wastewater effluents with ensured specificity using SERS assisted with multivariate analysis, *Environmental Pollution* 343 (2024) 123229

124. Hussein M Elmehdi, Krithikadevi Ramachandra, Siva Chidambaram, Gurukaelaiarasu Tamilarasi Mani, Saravanan Pandiaraj, Sondos Abdullah Alqarni, Kais Daoudi, Mounir Gaidi, Smart optical sensing of multiple antibiotic residues from wastewater effluents with ensured specificity using SERS assisted with multivariate analysis, *Chemosphere* 350 (2024) 141015
125. Arwa A. I. AlSafadi, Krithikadevi Ramachandran, Soumya Columbus, Abdelaziz Tlili a, Kais Daoudi, Mounir Gaidi, Highly efficient, label free, ultrafast plasmonic SERS biosensor (silver nanoarrays/Si) to detect GJB2 gene expressed deafness mutations in real time validated with PCR studies, *International Journal of Biological Macromolecules* 259 (2024) 129381
126. Ameni Rebhi · Chohdi Amri · Ines Khemissi · Rabia Benabderrahmane Zaghoulani · Mounir Gaidi · Anouar Hajjaji · Karim Choubani · Mohammed A. Almeshaal · Murugesan Palaniappan Papathi · Mohamed Ben Rabha, Porous silicon layer decorated with PbS nanoparticles by SILAR method for enhanced photocatalytic degradation of amido black dye, *J Nanopart Res* (2024) 26:47

PARTICIPATION TO INTERNATIONAL CONFERENCES

- [1] 30/6-5/7/ 1997 : Physique en Herbe (Caen-France), communication orale,
“Effect of Pt and Pd on the electrical reply of tin oxide under gas reductor ”
- [2] 7/7-11/7/1997 : Congrès de la Société Française de Physique (Paris-France), poster,
“ Agrégats de Pt dispersés dans des couches minces de SnO₂ pour capteurs de gaz : analyse EXAFS in-situ de l’environnement local ”
- [3]] 3/9-7/9/1997 : Eurosensors XI (Warsaw-Pologne), communication orale,
“In-situ EXAFS analysis of the local environment of Pt particles incorporated in thin films of SnO₂ semi-conductor oxide used as gas-sensors”
- [4] 16/2-7/3/1998 : Formation HERCULES (Grenoble-France), poster,
“In-situ evolution study of the oxidation state of Pt particles and correlation with electrical response of Pt doped tin oxide under CO”
- [5] 7/7-9/7/1998 : Journées Francophones des Jeunes Physico-Chimistes (Montpellier-France),
Poster,
“ Etude des mécanismes d’interaction lors de la détection des gaz polluants par des couches de SnO₂ dopées Pt ou Pd ”

- [6] 9/11-11/11/1998 : Journées Maghreb-Europe: les Matériaux et leurs, applications aux dispositifs capteurs physiques, chimiques et biologiques, MADICA98 (Monastir-Tunisie), poster-orale,
 “ Effet de l’incorporation de Pd sur la réponse électrique de SnO₂ en présence des gaz réducteurs : Etude de la mécanisme de détection ”
 “ Analyse in-situ par XAS (EXAFS and XANES) de l’environnement local des particules de platine incorporées à des couches de SnO₂ utilisées comme capteurs de gaz ”
- [7] 7/12-9/12/1998 : Les capteurs de pollution de l'environnement : Nouvelles perspectives, Polcap98, (Grenoble-France), communication oral.
 “ Propriétés électriques sous gaz polluant (CO) de couches minces polycristallines de SnO₂ contenant des agrégats dispersés de Pd ou de Pt : analyse des effets de taille des agrégats ”
- [8] 24/09/1999 : Colloque de L’Agence Rhône – Alpes Pour la maîtrise des Technologies de Mesures (ARATEM’99), poster, Annecy-France
 “ Détection à basse température du monoxyde de carbone par un élément sensible en film mince intégré à un capteur ”
- [9] 9/10-14/10/1999 : NSF-ESF Symposium on Nanoparticles : Technologies and Applications, Tacoma, (Washington-USA), poster,
 “ In-situ XAS Characterisation of nanoparticles of Pt incorporated in thin films of tin Oxide deposited by the Pyrosol method ”
- [10] 4/12-7/12/2001, Rayon X et Matière 2001, Strasbourg-France,
 “ Caractérisation de nano-colloïdes bimétalliques Pd-Sn par technique de rayons X et sondes électroniques ”
- [11] 7/7-10/7/2002 :9th International Meeting on Chemical Sensors, Boston, USA
 “ Sensing CO and NO₂ using aerosol pyrolysis SnO₂ thin films: basic studies of the effect of small amounts of catalytic metals on film sensitivity ”
- [12] 4/6-6/6-2003 : Upstate New York Chapter of the American Vacuum (UNY-VAC), Symposium on functional coating and surface engineering, Montréal, Canada
 “ SrTiO₃ thin films for optical applications : correlation between the microstructural properties and the sputter-etching characteristics of the film”
- [13] 2-7/11-2003 50th Intl. Symp.of the American Vacuum Society (AVS), Novembre 2003, Baltimore, Maryland, USA.
 “Influence of the microstructure on the sputter-etching characteristics of pulsed-laser-deposited thin films”

- [14] April 12 - 15, 2004 MRS Spring Meeting: New Materials for Microphotonics, St Fransisco, CA, US, Characterization of strontium-titanate-oxide thin films for optical devices applications’’
- [15] Mai 13-14, 2004, ACFAS 2004, Science et Ingénierie des Plasmas, Montréal Canada
 “Matériaux photoniques entre microstructure et propriétés optiques : Application pour des Guides d’onde actifs pour la nouvelle génération des fibres optiques re-configurable’’
- [16] Septembre 12-14, 2005, Photonics North 2005, Toronto, Canada,
 “Epitaxial CBN growth for fast electro-optic tunable devices’’
- [17] L. Stafford, O. Langlois, M. Gaidi, J. Margot, & M. Chaker, “Etching characteristics of SrTiO₃ films in halogenated high-density plasmas”, American Vacuum Society (AVS) 52th Int. Symp., Nov. 2005, Boston, Massachusetts.
- [18] O. Langlois. L. Stafford, J. Margot, M. Gaidi, & M. Chaker, “Influence of the positive ion composition on the ion-assisted chemical etch rate of SrTiO₃ thin films in Ar/SF₆ plasmas”, American Vacuum Society (AVS) 52th Int. Symp., Nov. 2005, Boston, Massachusetts.
- [19] Paul F. Ndione, Mouni rGaidi, Roberto Morandotti and Mohamed Chaker, Epitaxial Growth of CaxBa_{1-x}Nb₂O₆ thin film on (001) MgO by pulsed laser deposition , MRS Fall Meeting (2005), Boston, USA
- [20] Marcello ferrera, R. Helsten, L. razzari, i, P.F. Ndione, M. Gaidi, inrs-emt, M. Chaker, R. Morandotti, « détermination du coefficient électro-optique r₃₃ dans les couches minces de niobate de calcium et baryum », 75eCongrès de l’Acfas, colloque , plasmas : défis actuels et futurs, Montréal, Canada, 2007.
- [21] A. Hajjaji, M. Gaidi and B. Bessais, Effect of Pt/Pd doping on the microstructural properties of SnO₂ used for gas sensing, PSST-2008, Algérie.
- [22] M. Gaidi, M. A. El Khakani and B. Bessais, Nanostructured Tin oxide thin films for sensors application, TJASSST 2008, Sousse Tunisie
- [23] M. Gaidi, R. Smirani, B. Bessais and M. A. El Khakani, Effect of oxygen pressure and annealing on the photoluminescence properties of SnO₂ films deposited by pulsed laser deposition technique, The International Meeting on Materials for Electronic Applications IMMEA, Hammamet, Tunisia 8-10 Mai 2009.

- [24] A. Hajjaji, M. Gaidi, M. A. El Khakani, B. Chenevier, M. Labeau and B. Bessais, Optical properties tuning of SnO₂ films by metal incorporation and correlation to microstructure change, The International Meeting on Materials for Electronic Applications IMMEA, Hammamet, Tunisia 8-10 Mai 2009.
- [25] A. Hajjaji, M. Gaidi, M. A. El Khakani, B. Chenevier, M. Labeau and B. Bessais, Optical properties tuning of SnO₂ films by metal incorporation and correlation to microstructure change, The International Meeting on Materials for Electronic Applications IMMEA, Hammamet, Tunisia 8-10 Mai 2009.
- [26] N. Janene, A. Hajjaji, M. Ben Rabha, M. Gaidi, My. Ali El Khakani and B. Bessais, Effect of double treatment based on Porous Si and TiO₂ passivation on the optoelectronic properties of monocrystalline Si substrates, First Euro-Mediterranean Conference on Materials and Renewable Energies (EMCMRE-1) 21-25 November 2011, Marrakech, Maroc.
- [27] Hajjaji, M. Ben Rabha, N. Janene, M. Gaidi, B. Bessais and M. A. El Khakani, Photoluminescence enhancement in monocrystalline silicon by combining Cr-doped TiO₂ and porous silicon, First Euro-Mediterranean Conference on Materials and Renewable Energies (EMCMRE-1) 21-25 November 2011, Marrakech, Maroc.
- [28] M. Salem, M. Ben Rabha, M.A. El Khakani, B. Bessais, M. Gaidi, Excellent Si surface passivation by porous silicon and an ultrathin Al₂O₃ capping film, Second Euro-Mediterranean Meeting on Functionalized Materials EMM-FM March 2013, Hammamet, Tunisia 2013.
- [29] M. Salem, B. Bessais, M. Gaidi, « Amélioration des propriétés optoélectroniques du Si multicristallin pour des applications photovoltaïque » -3ème Journées des jeunes chercheurs en Physique 3ème JJC, Centre des stages et des colonies des vacances de Rimel (Tunisia) Avril 10-11, 2013.
- [30] M. Salem, M. Ben Rabha, B. Bessais, M. Gaidi, « Optoelectronic enhancement of multicristalline silicon solar cells by porous silicon and an ultrathin aluminum capping film », International Conference on Magnetic and Superconducting Materials MSM 2013, Hammamet (Tunisia) September 02-05, 2013.
- [31] M. Ben Rabha, A. Hajjaji, I. Ka, M.A. El Khakani, B. Bessais and M. Gaidi, Metal assisted chemical etching for silicon nanostructure fabrication: Optical and optoelectronic characterization, Dubai- United Arab Emirates , NANOTECH Octobre 28-31/2013.

- [32] N. Janene, A.Hajjaji, M. Ben Rabha, My. Ali El Khakani , B. Bessais and M. Gaidi, Influence of porous silicon passive layer and TiO₂ coating on the optoelectronic properties of multicrystalline Si substrate, France, E-MRS May 14-18 / 2012
- [33] A.Hajjaji, K. Trabelsi , M. Ben Rabha, M. Amlouk B. Bessais , M. Gaidi and M. A. El Khakani, Effect of Cr doping on the photocatalytic activity of TiO₂ elaborated by means of a magnetron co-sputtering process , Strasbourg-France, E-MRS May 27- 31 / 2013
- [34] M. Salem, A. Hajjaji, M. A. El Khakani, B. Bessais, M. Gaidi, « Minority carrier lifetime enhancement in multicrystalline silicon by means of a dual treatment based on porous silicon and Al₂O₃ passivation layers » The International Renewable Energy Conference IREC 2014, Hammamet (Tunisia) March 25 – 27, 2014.
- [35] A.Hajjaji, K. Trabelsi , A. Atoui , L. Bousselmi , M. Gaidi, M. A. El Khakani and B. Bessais, Photocatalytic activity of Cr-doped TiO₂ nanoparticles deposited on porous multicrystalline silicon films, PSST 2014 SPRING MEETING Mars 9 -14 / 2014.
- [36] M. Salem, Z. Yamlaoui Alami, B. Bessais, M. Addou, A. Chahboun, M. Gaidi, ZnO Films Combined Porous Silicon on Multicrystalline Silicon Substrates: Antireflectance and Passivation Properties, ICAM 2015 : XIII International Conference on Advanced Materials. Jeddah, Saudi Arabia 26-28 January 2015
- [37] N. Janene, N.Ghraiiri, M. A. El Khakani, M.Gaidi, “Electrical properties of TiO₂/PS/mc-Si heterojunction based solar cell” 2nd International Conference on Green Energy & Environmental Engineering GEEE – 2015, April 18 - 19, 2015 – Monastir, Tunisia
- [38] K. Trabelsi, A. Hajjaji, I. Ka, M. Gaidi, B. Bessaïs, M. A. El Khakani, Understanding Pt doping and thermal effect on structural, morphological and optical behaviors of Pulsed Laser deposited TiO₂ : Pt films, International Meeting on Advanced Materials and Processes for Environment, Energy and Health, Quebec City, Canada, October 14-16, 2015
- [39] M. Gaidi and M Salem, Enhancement of ZnO photoconductivity thin film by Fe-doping, The International Renewable Energy Congress (IREC), March 22-24, 2016, Hammamet Tunisie.
- [40] A. HAJJAJI, I. Ka, M. GAIDI, B. BESSAIS and M. A. EL KHAKANI, Influence of PLD deposited PbS nanoparticles on optical properties of multicrystalline porous, Porous Semiconductors - Science and Technology (PSST), 6-11/3 (2016), Tarragon, Spain.
- [41] M. Gaidi, Opto-Electronic Properties Tuning of ZnO: Effect of Cu Doping Content, Frontiers in Theoretical and Applied Physics UAE 2017 (FTAPS 2017), February 22-25, AUS, UAE.

- [42] M. Gaidi, Enhancing the photoelectrochemical response of TiO₂ nanotubes through their nanodecoration by pulsed-laser-deposited Ag nanoparticles, 7th International Advances in Applied Physics and Materials Science Congress & Exhibition (APMAS), Turkey, 22-26 April 2017.
- [43] M. Gaidi, Hajjaji, M. Ben Rabha, K. Trabelsi, B. Bessais and M. A. El Khakani, Effect of novel treatment based on PLD deposited PbS NP/Porous Si on the optoelectronic of mc-Si, Surfcoat 2018, The International Conference on Surfaces, Coatings and Interfaces 28 Mar - 30 Mar 2018 | Incheon, Seoul - Korea
- [44] A. Hajjaji, C. Amri, M. Ben Rabha, M. Gaidi, B. Bessais and M. A. El Khakani, Efficient surface passivation of c-Si substrates through a dual treatment based on their coating by SiNWs covered with very thin PLD-deposited Al₂O₃ layer, Porous Semiconductors Science and Technology 2018, 11-16 March 2018 La Grande Motte, France.
- [45] M. Gaidi, M. Salem, S. Akir, I. Massoudi, Y. Litaïem and K. Khirouni, Novel ZnO and Carbon nanocomposite for enhanced photoelectrochemical sensing activity, ICAMP October 31-November 3 (2018) Montreal, Qc, Canada
- [46] **M. Gaidi**, A. Hajjaji, S. Jemai, K. Trabelsi, A. N. Alhazaa, B. Bessais and M. A. El Khakani, Photocatalytic and photoelectrochemical properties Enhancement of TiO₂ nanotubes by SILAR Deposited PbS nanoparticles treatment, The International Conference on Materials Engineering and Nanotechnology (ICMEN 2019) Kuala Lumpur, Malaysia during December 2-5, 2019.

Published books

- 1- Mohamed Ben Rabha, Mounir Gaidi, Brahim Bessais, Traitement De Surface Du Silicium Multicristallin (French Edition), Feb 2014, Published by Editions Universitaires Europeennes ISBN 10: 6131581088 / ISBN 13: 9786131581083
- 2 – Mounir Gaidi, XAS investigation de Films minces de SnO₂ dopés: analyses in-situ des corrélations entre la réponse électrique et le comportement des agrégats métalliques, July 2015, Published by Editions académiques Francophones ISBN-10: 3838174240/ ISBN-13: 978-3838174242.
- 3- Anouar Hajjaji, Mosbah Amlouk, Mounir Gaidi, Brahim Bessais, My Ali El Khakani, Chromium Doped TiO₂ Sputtered Thin Films: Synthesis, Physical Investigations and Applications, (2015) Springer Briefs in Applied Sciences and Technology, ISBN: 978-3-319-13352-2 (Print) 978-3-319-13353-9 (Online)

Book chapters

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