



## معلومات شخصية

Nom : Mouchaal

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الحالة العائلية : متزوج

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## الشهادات

- شهادة التأهيل الجامعي 19 ديسمبر 2019  
شعبة الفيزياء
- شهادة الدكتوراه علوم 03 ماي 2016  
جامعة وهران 1 أحمد بن بلة  
شعبة الفيزياء / تخصص: علوم المواد  
عنوان رسالة الدكتوراه: «nouvelles électrodes transparentes substitues de l'ITO»
- شهادة الماجستير 16 ماي 2012  
جامعة وهران 1 أحمد بن بلة  
شعبة الفيزياء / تخصص: علوم المواد  
عنوان رسالة الماجستير: «Réalisation et Caractérisation des Cellules Solaires Organiques à base de : PTB ; CuPc/C60»
- شهادة الدراسات العليا جوان 2009  
جامعة وهران 1 أحمد بن بلة  
شعبة الفيزياء / تخصص: علوم المواد  
معدل 13,12 الأول في الدفعة
- شهادة البكالوريا  
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معدل 13,27

## المناصب البيداغوجية والإدارية

- مسؤول فريق شعبة التكوين الفيزياء من 13 ديسمبر 2017 الى 28 نوفمبر 2022  
قسم الفيزياء / كلية العلوم بجامعة معسكر
- نائب عميد لما بعد التدرج والبحث العلمي والعلاقات الخارجية من 29 نوفمبر 2022 الى 22 أبريل 2024  
كلية العلوم الدقيقة لجامعة معسكر

- نائب مدير جامعة مصطفى اسطنبولي بمعسكر مكلف بالتكوين العالي في الطور الثالث والتأهيل الجامعي والبحث العلمي والتكوين العالي فيما بعد التدرج من 22 أبريل 2024 إلى يومنا هذا.
- 
- مكلف بتسيير شؤون إدارة جامعة مصطفى اسطنبولي بمعسكر من 17 جوان 2025 إلى يومنا هذا.

## المقالات والأبحاث العلمية

- 1) **Y.Mouchaal**, A.LakhdarToumi ,A.S. Yapi, Y. Lare, G.M. Soto, L. Cattin , K.Toubal ,A.Reguig ,A.Khelil ,A.Djafri , M. Morsli, M.A. Del Valle, and J.C.Bernède“*Optical and electronic proprieties of thin films based on (Z)-5-(4-chlorobenzylidene)-3-(2-ethoxyphenyl)-2 thioxothiazolidin-4-one, (CBTZ) and possible application as exciton-blocking layer in heterojunction organic solar cells*” EPJ Web of Conferences, 29:30(2012)1-7.
- 2)**Y. Mouchaal**, G. Louarn , A. Khelil, M. Morsli , N. Stephant , A. Bou , T. Abachi, L. Cattin, M. Makha, P. Torchio, J.C. Bernède“*Broadening of the transmission range of dielectric/metal multilayer structures by using different metals*”, Vacuum 111 (2015) 32-41.
- 3)**Y Mouchaal**, H Gherrass, A B Reguig, A Hachemaoui, A Yahiaoui, M Makha, A Khelil, and J C Bernede“*Morphological and physicochemical properties of dip-coated poly {(2,5-diyl pyrrole) [4-nitrobenzylidène]} (PPNB) thin films:towards photovoltaic applications*”, Eur. Phys. J. Appl. Phys. 69: 20203 (2015) 1-5.
- 4) **Y Mouchaal**, AEnesca, C Mihoreanu, A Khelil, A. Duta. “*Tuning the opto-electrical properties of SnO<sub>2</sub>thin films by Ag<sup>+1</sup> and In<sup>+3</sup> co-doping*”, Materials Science and Engineering B, 199 (2015) 22–29.
- 5) A. LakhdarToumi, A. Khelil, J.C. Bernède, **Y. Mouchaal**, A. Djafri, K. Toubal, N. Hellal and L. Cattin “*Optimum compromise between optical and electrical propriety of the planar multi-heterojunction organic solar cells based with new Tizol derivative, the (2-THIOXO-3-N-(2-METHOXYPHENYL) THIAZOLIDIN-4-ONE), as electron donor*”, Surface Review and Letters, 22(2015) 1550025:1-8.
- 6) A. LakhdarToumi, A. Khelil, K. Tobel, M. Makha, L.A. Hernández, **Y. Mouchaal**, L. Cattine, M.A. del Valle, F.R. Diaz, J.C. Bernède.“*On the exciton blocking layer at the interface organic/cathode in planar multi-heterojunction organic solar cells*”, Solid-State Electronics 104 (2015) 1–5.
- 7)PatriziaBorghetti, **YounesMouchaal**, Zongbei Dai, GrégoryCabailh, StéphaneChenot, RémiLazzari and Jacques Jupille.“*Orientation-dependent chemistry and band-bending of Ti on polar ZnO surfaces*”, Physical Chemistry Chemical Physics 21 (2017) 1-9.
- 8)M. Hssein , S. Tuo , S. Benayoun , L. Cattin , M. Morsli , **Y. Mouchaal** , M. Addou , A. Khelil , J.C. Bernede, Organic Electronics 42 (2017) 173-180.Cu-Ag bi-layer films in dielectric/metal/dielectric transparent electrodes as ITO free electrode in organic photovoltaic devices.
- 9) Mohammed El Amine Monir, HadjBaltach, **YounesMouchaal**, G. Murtaza, J Supercond Nov Magn 34 (2017) 114, The Effects of Ru and Rh Substitutions on the Magneto-electronic and Optical Properties of the TbNi<sub>5</sub> Intermetallic Compound: An Ab Initio Investigation,
- 10) Cattin Linda; El JouadZouhair; Stephant Nicolas; Louarn Guy; Morsli M; Hssein Mehdi; **MouchaalYounes**; TouihriSaad; Addou Mohammed; KhelilAbdelbacet; Bernede J.C, Dielectric/Metal/Dielectric alternative transparent electrode: Observations on stability/degradation,Journal of Physics D: Applied Physics 50 (2017) 375502 (13pp)
- 11)AbderrahmanneRemil, **YounesMouchaal**, AbdelkarimBendoukhaReguig, AbderahmanneLakhdarToumi, HamouGherrass, Aisha Hachemaoui , Ahmed Yahiaoui And AbdelbacetKhelil,Synthesis of new nitrobenzylidenederivatives and pyrrole-based copolymers For dye-sensitized solar cells: effect ofsubstituent on opto-electrical properties of Dip-coated thin film, Surface Review and Letters (2017) 1850116 (9 pages)

- 12) Mohammed El Amine Monir, Hayat Ullah,, HadjBaltach, **YounesMouchaal**, Omar Merabih, AichaBahnes,DjamelRached, Shifting in optoelectronic properties from pure K<sub>2</sub>O and Rb<sub>2</sub>O compounds to their V- and Cr-doped alloys, *International Journal of Modern Physics B* Vol. 32 (2018) 1850116 (12 pages)
- 13) Amel Bettayeb, Bendoukha Abdelkarim Reguig, **YounesMouchaal**, Yâminâ Berredjem Adsorption of metribuzin herbicide on raw maghnite and acid-treated maghnite in aqueous solutions *Desalination and water treatment* 145 (2019) 262–272
- 14) A Bahnes, MEA Monir, **Y Mouchaal**, FEH Hassan, Z Bahnes, AB Reguig, First-principles calculations to investigate half-metallic ferromagnetism in Zn<sub>0.50</sub>Ti<sub>0.50</sub>S alloy by using DFT + *U* calculations *Philosophical Magazine*, (2019) 1-15.
- 15) **Y. Mouchaal**, A. Khelil, Optimization of SnO<sub>2</sub>/Ag nanowire transparent hybrid electrodes for optoelectronic applications, ", *Eur. Phys. J. Appl. Phys.*, 87 3 (2019) 31302
- 16) L. Cattin, A. El Mahlali, M.A. Cherif, S. Touihri, g, Z. El Jouad, **Y. Mouchaal**, P. Blanchard, G. Louarn, H. Essaidi, M. Addou, A. Khelil, P. Torchio, J.C. Bernède "New dielectric/metal/dielectric electrode for organic photovoltaic cells using Cu:Al alloy as metal" *Journal of Alloys and Compounds* (2020) 152974.
- 17) K Benameur, **Y Mouchaal**, K Benchouk, A Laafer, R Barille, Synthesized and Characterizations nanoparticles of chalcopyrite alloy CuIn<sub>1-x</sub>Fe<sub>x</sub>Se<sub>2</sub> *Inorganic Chemistry Communications*, (2021) 109165
- 18) **Y Mouchaal**, S Benkoula, A Khelil, Synthesis of SnO<sub>2</sub> thin layers by sol-gel programmed dip coating method: Effect of deposition precursor on structural and optical properties, *Journal of New Technology and Materials* 11 (2), (2021) 42-47
- 19) A Benmohammed, D Hadji, A Guendouzi, **Y Mouchaal**, A Djafri, A Khelil, Synthesis, Characterization, Linear and NLO Properties of Novel N-(2, 4-Dinitrobenzylidene)-3-Chlorobenzenamine Schiff Base: Combined Experimental and DFT Calculations *Journal of Electronic Materials* 50 (9), (2021) 5282-5293.
- 20) K Benameur, **Y Mouchaal**, K Benchouk, A Laafer, R Barille, Synthesized and Characterizations nanoparticles of chalcopyrite alloy CuIn<sub>1-x</sub>Fe<sub>x</sub>Se<sub>2</sub> *Inorganic Chemistry Communications* 136 (2022) 109165.
- 21) Khedidja Benameur, **YounesMouchaal**, Kheireddine Benchouk, Abdelkader Laafer, Regis Barille Syntheses and Characterizations of CuIn<sub>1-x</sub>Zn<sub>x</sub>Se<sub>2</sub> Chalcopyrite Nanoparticles, *Materials* 2022, 15(4), 1436.
- 22) K Benameur, **Y Mouchaal**, B Kouskoussa, A Tab, KELAZ OUARI, Optimization of structural and optical properties of CuIn<sub>1-x</sub>Zn<sub>x</sub>Se<sub>2</sub> thin films by zinc incorporation *Journal of Optoelectronics and Advanced Materials* 24 (2022)
- 23) A Anab, **Y Mouchaal**, A Yahiaoui, A Hachemaoui, AL Toumi, A Khelil, Research on Chemical Intermediates 49 (2023), 2141-2153
- 24) D Hadji, A Benmohammed, **Y Mouchaal**, A Djafri, Synthesis and characterization of novel thiosemicarbazide for nonlinear optical applications: combined experimental and theoretical study *Rev. Roum. Chim* 68 (2023), 463-471.
- 25) SE BOUSSAADA, **Y MOUCHAAL**, H RIANE, A KHELIL An investigation of structural, electrical and optical properties of metal free-Zinc Oxide Thin Films Using Spray Pyrolysis Sol-Gel Techniques, *Egyptian Journal of Chemistry* (2024) .
- 26) Massillia Ait Radi, Zakaria Cherifi, Bouhadjar Boukoussa, Noureddine Karkachi, **Younes Mouchaal**, Khaldoun Bachari, Rachid Meghabar, Nabahat Sahli, Ultrasonic-aided preparation of poly (vanillin-co-thiophene)/green Fe<sub>3</sub>O<sub>4</sub> nanocomposites via solution mixing for methyl orange adsorption and antibacterial applications, *JOURNAL OF ENVIRONMENTAL CHEMICAL ENGINEERING* 12 (2024) 6.
- 27) Abdelmadjid Benmohammed, Djebar Hadji, **Younes Mouchaal**, Ayada Djafri Synthesis and characterization of novel chalcone with good nonlinear optical properties 8 (2025) 85-97
- 28) Salah Eddine Boussaada, **Younes Mouchaal**, Houaria Riane, Abdelbacet Khelil, Deep insights into the coupled optoelectronic analysis of ETL thin films and photovoltaic analysis of CsPbI<sub>3</sub>-based perovskite solar cell using SCAPS-1D simulations, *Optical and Quantum Electronics* 57 (2025) 262.
- 29) Salah Eddine Boussaada, Younes Mouchaal, Performance Optimization of an Inorganic Lead-Free CsGeI<sub>3</sub> Based Perovskite Solar Cells by SCAPS-1D Simulation, *Arabian Journal for Science and Engineering* 1 (2025) 18

- 1) **First Euro-Mediterranean Meeting on Functionalized Materials EMM FM**  
Sousse, Tunisia Sep 2011.  
Contribution: Poster
- 2) **First international conference on Inovative Materials and Tichniques CIMT1**  
Hammemt, Tunisia, Nov 2012  
Contribution: Talk
- 3) **Francophone meeting on Insulation Materials RFMI2**  
Oran, Algeria, Dec 2012  
Contribution: Talk
- 4) **First International Conference on Renewable Energies and Nanotechnology impact on Medicine and Ecology ICREN**  
Constantine, Algeria, Mar 2013  
Contribution: Talk.
- 5) **Conference on project Editing and research methodology**  
Craiova, Roumania, 26-28 Mai 2014
- 6) **Autumn School of X-ray diffraction**  
Oran, Algeria, 28-30 Sep 2014.
- 7) **Chemical Engineering and Chemical Technology**  
Istanbul, Turkey, 23-25 Oct 2014  
Contribution: Poster
- 8) **17th International Conference on II-VI Compounds**  
Paris, France, 13-18 Sep 2015  
Contribution: Poster
- 9) **National Exhibition of Research Products**  
Palais des expositions, SAFEX, Alger, 2-3-4 juillet 2018  
Contribution: exposition de produit innovant (oral and Poster presentation)
- 10) **1st day of Physics of the University of Mascara JPUM1**  
Mascara University, Algeria, 02 May 2018, Organizer, Animation of oral and poster sessions  
President du comitéd'organisation
- 11) **International Conference on Materials Science ICMS2018**  
Setif, Algérie, 12-14 Sep 2018. Contribution: Talk.
- 12) **13<sup>th</sup> Maghreb Days on Materials Science JMSM'2020 (member of organization committee)**  
Oran, Algeria 09-11 Mach 2020. Contribution :Oram talk.  
New transparent electrodes based on Ag nanowires prepared by spray pyrolysis for photovoltaic application.
- 13) **13<sup>th</sup> Maghreb Days on Materials Science JMSM'2020 (member of organization committee)**  
Oran, Algeria 09-11 Mach 2020. Contribution :Oram talk.  
Spray diposited anodic buffer layer for cost effective bulk heterojunction solar cells
- 14) **International Seminar on Online Industry and Technology (Webinar).**  
Algerian Journal of Engineering, Architecture and Urbanism March  
12 and 13, 2021, Oral communication  
Title of the communication: Simulation and Optimization of Third Generation Perovskite Solar Cells
- 15) **International Seminar on Online Industry and Technology (webinar).**  
Algerian Journal of Engineering, Architecture and Urbanism  
March 12 and 13, 2021, Oral communication
- 16) **Journée de l'impact des Energie Renouvelable**  
Université Mustapha Stambouli de Mascara, Mascara, 11 Dec 2023

- 1) Master thesis, physics (Materials Sciences) University of Mascara 2016/2017**  
Réalisation et étude d'anodes transparentes pour les cellules solaires (Miss. KadiFaiza and BellilHakima)
- 2) Master thesis, physics (Materials Sciences) University of Mascara 2017/2018**  
Élaboration et caractérisation d'une électrode transparente multi-couches Oxyde/Métal/Oxyde (Mrs. SahlaRabie andBoussaadaSalahEdine)
- 3) Master thesis, physics (Materials Sciences) University of Mascara 2017/2018**  
Etude des propriétés physico-chimique de couches minces de polymère conjugué en vue d'application dans les cellules solaires organiques (Mr. ReziniBillel)
- 4) Master thesis, physics (Materials Sciences) University of Mascara 2018/2019**  
Étude et optimisation des cellules organique à base de CuPc/C60 (Miss. Ata Karimaand ElaroubiAhlem)
- 5) Master thesis, physics (Materials Sciences) University of Mascara 2018/2019**  
Elaboration et étude de l'interface ZnS/M pour application optoélectronique (Miss. Med KrarroubiChaimaa)
- 6) Master thesis, physics (Materials Sciences) University of Mascara 2018/2019**  
Etudes Des Propriétés Physico-Chimiques Des Couches Minces De Polymère Conjugué En Vue d'Application Comme Couche Active Dans Les Cellules Solaires Organiques (Miss. KhiterImen)
- 7) Master thesis, physics (Materials Sciences) University of Mascara 2019/2020**  
Propriétés physiques des films minces du semi-conducteur organique Pentacene déposé sur substrat diélectrique (Miss. KAOU MarouaHouria)
- 8) Master thesis, physics (Materials Sciences) University of Mascara 2020/2021**  
"Elaboration et étude des structures bicouches transparentes et conductrices à bases d'oxydes de zinc dopé Al et Sn, en vue d'intégration dans les cellules solaires" (Miss D CHERIFI and B Djebli)
- 9) Master thesis, physics (Materials Sciences) University of Mascara 2020/2021**  
Etude des propriétés physiques des couches minces de matériaux organique semi-conducteurs en vue d'application aux cellules solaires de troisième génération (Mr. A DJAHAFI)
- 10) Co-supervision of Doctorat thesis, Chemistry, 2023**  
Elaboration et étude des films minces de nanofils d'argent incorporé dans un polymère conducteur appliqué aux CSO. (Mr. Ali Anab)
- 11) Master thesis, physics (Materials Sciences) University of Mascara 2024/2025**  
Tandem organo-metallic perovskite based third generation flexible solar cells (Miss. Houria Didoune)

## مشاريع البحث

- 1) Member of the National CNEPRU research project**  
Title: Development of hybrid solar cells  
Approved from January 01, 2015 for four years.
- 2) Member of PRFU national research project B00L02UN310120180005**  
Title: Realization and study of new transparent hybrid electrodes based on metallic oxide / silver nano-lines for application in photovoltaic solar cells and organic diodes  
Approved from January 01, 2018 for four years.
- 3) Member of the Euro-Mediterranean ERANETMED-ENERG-11-196 project**  
Title: New Indium Free Flexible Electrode for Organic Photovoltaic Cells.  
Approved from April 22, 2016 for three years.
- 4) Manager of PRFU national research project B00L02UN290120220006.**  
Title: Ingénierie de la composition et des interfaces des cellules solaires de 3e génération à pérovskite organique-inorganique  
Approved from January 01, 2022 for four years
- 5) ERASMUS+ KA107 project (manager from Algerian part)**  
Partner: Faculty of Product Design and Environment, Transilvania University of Brasov, Romania.