CURRICULUM VITAE

FIRST NAME: FAYÇAL

NAME: BENSOUICI

Abbas LAGHROUR University, Khenchela

Faculty of Science and Technology.

Material science department.

Route de Oum el bouaghi, Elhama 40004 Khenchela, Algeria

STAFF

- Birth: February 4, 1976.
- Nationality: Algerian
- Married, 4 children
- Email: bens_faycal@univ-khenchela.dz

EDUCATION

- June 1994 / Baccalaureate, exact science, High school: Reda Houhou, constantine.
- June 1999 / Advanced diploma in solid state physics, Materials physics, University of Constantine, Constantine.
- July 2002 / Master's degree in solid state physics, Materials physics, University of Constantine, Constantine.
- November 2014/ Doctorate degree in science, Physics of materials, University of Boumerdes,

Boumerdes.

- February 2017 / University habilitation diploma, Physics of materials, University of Boumerdes.
- December 2021/ physics professor.

EMPLOYMENT

- 2004/ Research associate at the Silicon Technology Development Unit (UDTS)
- 2004– 2018/ Teacher-researcher at M'Hamed Bouguera University - Boumerdes.
- 2018 – present/ Teacher-researcher at Abbas LAGHROUR University, Khenchela
- 2008–2010/ Lecturer (mechanics module II, rational mechanics) at school superior of the air defense of the ESDAT territory

- 2010/2011 Lecturer (mechanics module I and mechanics II, rational mechanics) at the Algerian petroleum institute IAP.
- 2007–Present permanent researcher at the research unit: materials, processes and environment (URMPE), advanced materials and sol-gel team.
- 2018- present Member in the research team: laboratory structures, properties and inter-atomic interactions led by Professor Djelloul Abdelkader.
- JUNE 2021- present: head of SM domain at Abbas LAGHROUR University, khenchela

INTERNATIONAL PUBLICATIONS

1. Naas, L. A., Bouaouina, B., Bensouici, F., Mokeddem, K., & Abaidia, S. E. (2024). Effect of TiN thin films deposited by oblique angle sputter deposition on sol-gel coated TiO2 layers for photocatalytic applications. *Thin Solid Films*, 140275.
2. Serbout, W., Bensouici, F., Meglali, O., Iaiche, S., Bououdina, M., Bellucci, S., & Humayun, M. (2023). Fabrication of ordered layered SnO2/TiO2 heterostructures and their photocatalytic performance for methyl blue degradation. *Environmental Science and Pollution Research*, *30*(36), 85792-85802.
3. Abboudi, A., Iaiche, S., Djelloul, A., Chala, A., Kezzoula, F., Bensouici, F., ... & Humayun, M. (2023). Effect of fluoric acid concentration on the structural, optical, and photocatalytic properties of TiO2 thin films. *Inorganic Chemistry Communications*, *155*, 111073.
4. MUSTAFA, A., BENSOUICI, F., BOUOUDINA, M., *et al.* Tuning the optical properties and photocatalytic activity of Ti0. 96Nd0. 02O2 by Cd/Fe co-doping. *Journal of Materials Science: Materials in Electronics*, 2022, vol. 33, no 8, p. 5707-5719.
5. Ladjouzi, S., Guerbous, L., Bensuici, F., & Bendiba, G. (2021). γ-radiation, chemical synthesis of Ce3+: Gd2Si2O7/SiO2 nanocomposite. *Radiation Physics and Chemistry*, *189*, 109758.

6. Ahmed Kerrami, Lotfi Khezami, Mohamed Bououdina, Laila Mahtout, Abueliz Modwi, Souhila Rabhi, Faycal Bensouici, Hayet Belkacemi. (2021). "Efficient photodegradation of azucryl red by copper-doped TiO2 nanoparticles—experimental and modeling studies" Environmental Science and Pollution Research,1-14, Springer Berlin Heidelberg

7. A Mustafa, M Bououdina, B Al-Najar, T Souier, F Bensouici, B Belache, Physical and photocatalytic properties of Nd codoped (Ag, Cu)TiO_2 thin films, (2021), Surface Engineering ,37, 6, 784-794, Taylor & Francis

8. Mohamed Benkhada, Fayçal Bensouici, Toufik Boufendi, Parametric Study of Nanoparticles Effects on Convective Heat Transfer of Nanofluids in a Heated Horizontal Annulus, (2021), Journal of Nano Research, 70, 81-100, Trans Tech Publications Ltd
9. Mahdia Toubane, Assia Azizi, D Houanoh, R Tala-Ighil, F Bensouici, K Chebout, Mohamed Bououdina, Effects of Thickness and Preheated Temperature on Grains Orientation of 2D-ZnO Nanostructure and their Photocatalytic Activity, (2021), Journal of Nano Research, 66, 113-128, Trans Tech Publications Ltd

10. Messaid, B. E., Le Paven, C., Talaighil, R. Z., Benzerga, R., Le Gendre, L., Marlec, F., & **Bensouici, F.** Optimization of a rear system based on titanium nitride for a flexible CuInSe2 solar cell. Optik, **(2020)**. 206, 164305.

11. BENYAKHLEF, M., **BENSOUICI, F**., BOUOUDINA, M., et al. Surface, structural and optical properties dependence of Fe-doped TiO2 films deposited onto soda–lime–glass. Surfaces and Interfaces, **(2020)**, vol. 21, p. 100682. Elsevier

12. Chouk, R., Haouanoh, D., Aguir, C., Bergaoui, M., Toubane, M., Bensouici, F., ... & Khalfaoui, M. (2020). Dye sensitized TiO 2 and ZnO charge transport layers for efficient planar perovskite solar cells: Experimental and DFT insights. *Journal of Electronic Materials*, *49*(2), 1396-1403.

13. D. Haouanoh, R. TalaIghil, M. Toubane, **F. Bensouici**, & K. Mokeddem,. Effects of thermal treatment and layers' number on SnO_2 thin films properties prepared by sol-gel technique. Materials Research Express(2019) 6(8), 086422.

14. A. Kerrami, L.Mahtout, **F.Bensouici**, M.Bououdina, S.Rabhi, E.Sakher, & H.Belkacemi. "Sy- nergistic effect of Rutile-Anatase Fe-doped TiO_2 as efficient nanocatalyst for the degrada- tion of Azucryl Red" Materials Research Express, (2019).

15. S.Boukerche, A.Himour, M.Bououdina, **F.Bensouici**, & S.Ouchenane," Multilayered ZnO/TiO_2 nanostructures as efficient corrosion protection for stainless steel 304". Materials Research Express,(2019) 6(5), 055052.

16. A.Aouina, **F.Bensouici** ,M.Bououdina, R.Tala-Ighil,M.Toubane, F.Kezzoula, K.Chebout ;" Ef- fect of Er doping on the microstructural, optical, and photocatalytic activity of TiO_2 thin films" Mater. Res. Express 6 (2019) 016406. IOP Publishing Ltd

17. Bachir Eddine Messaid, Claire Le Paven, Razika Zair Talaighil, Florent Marlec, Ratiba Ben- zerga,Laurent Le Gendre and **Fayçal Bensouici** "Partial replacement in CISe solar cells of the molybdenum layer by an epitaxial Titanium Nitride thin film deposited onto MgO sub- strate" Mater. Res. Express 5 (2018) 106408. IOP Publishing Ltd.

18. S.Bouhouche, **F.Bensouici** , M.Toubane, A.Azizi, A.Otmani, K.Chebout, F.Kezzoula, RTala-Ighil and M.Bououdina ; "Effect of Er^{3+} doping on structural, morphological

and photoca-talytical properties of ZnO thin films" Mater. Res. Express 5 (2018) 056407. IOP Publishing Ltd

19. B. Bouaouinaa, A. Besnard, S.E. Abaidia, A. Airoudj, **F. Bensouici**,« Correlation between mechanical and microstructural properties of molybdenum nitride thin films deposited on silicon by reactive R.F.magnetron discharge» Surface and Coatings Technology 333 (2018) 32–38

20. M. Toubane, R. Tala-Ighil, **F. Bensouici**, M. Bououdina, M. Souier, S. liu, Weiping. Cai and

A. Iratni, « Sol Concentration effect on ZnO nanofibs Photocatalytic Activity Synthesized by Sol-Gel Dip Coating Method » Mater. Res. Express•4 (2017) 035023 Copyright 2017 IOP Publishing Ltd.

21. Tala-Ighil, R., Bensouici, F., Larab, B., Bachir, S., Toubane, M., Haouanoh, D., & Iratni, A. (2017). Optimized tin-doped and undoped zinc oxide thin layers for photovoltaic application. *Optoelectronics and Advanced Materials-Rapid Communications*, *11*(5-6), 332-336.

22. **F. Bensouici**, M. Bououdina, A.A. Dakhel, R. Tala-Ighil, M. Tounane, A. Iratni, T. Souier,

S. Liu, W. Cai, «Optical, structural and photocatalysis properties of Cu-doped TiO_2 thin films», Applied Surface Science. 395 (2017) 110–116.

23. **F. Bensouici** , M. Bououdina , A.A. Dakhel , T. Souier , R. Tala-Ighil , M. Toubane , A. Iratni, S. Liu , W. Cai « Al doping effect on the morphological, structural and photocatalytic properties of TiO_2 thin layers » Thin Solid Films, 616 (2016), 655–661

24. M. Toubane, R.Tala-Ighil, **F.Bensouici**, M.Bououdina, W.Cai, S.Liu, M.Souier, A.Iratni ; «Struc- tural, optical and photocatalytic properties of ZnO nanorods : Effect of aging time and number of layers » Ceramics International. 42 (2016)9673–9685.

25. **F.Bensouici**, T.Souier, A.A. Dakhel, A.Iratni, R.Tala-Ighil, M.Bououdina « Synthesis, cha- racterization and photocatalytic behavior of Ag doped TiO_2 thin film » Superlattices and Microstructures. 85 (2015) 255-–265.

26. S. Ladjouzi, R. Tala-Ighil, A. Iratni, M. Izerrouken, L. Guerbous, S. Hadji, **F. Bensouici**, HPérez ; « γ-Ray Irradiation Effect On $Gdbo_3/Silica : Ce^{3+}$ Composite Prepared By Sol Gel Method » Radiation Physics and Chemistry, 114 (2015) 1–4.

26. Razika Tala-Ighil, Mahdia Toubane, **Fayçal Bensouici**, Amel Slimani, D. Haouanoh, Aicha Iratni And Samira Sali, « Effect Of Back Contact Material On Czts Solar Cells Simulated With Amps » Journal of Applied Physical Science International, ISSN No. : ISSN : 2348– 0130 , Vol. 3, Issue : 1, 2015 , Page 1–6.

27. **F.Bensouici**, T.Souier, A.Iratni, A.Iratni, A.A.Dakhel, R.Tala-Ighil, M.Bououdina, "Effect of acid nature in the starting solution on surface and photocatalytic properties of TiO_2 thin films" Surface and coatings Technology 2014 (251) 170–176.

Book chapter

–Chapitre 27 : **F. Bensouici**, R. Tala-Ighil,cand M. Bououdina ; « Nanostructured Oxide Materials for Photodegradation of Dyes » RSC Detection Science Series No.10 Advanced Environmental Analysis : Applications of Nanomaterials, Volume 2 ; 207–234. Edited by Chaudhery Mustansar

Hussain and Boris Kharisov, © The Royal Society of Chemistry 2017

–Chapitre 56 : 14) **F.Bensouici**, M. Bououdina, A. Iratni, M. Toubane, R. Tala-Ighil "Effect of thickness on photocatalytic activity of TiO_2 thin films. Book chapter dans : Progress in Clean Energy, Volume 1 : Analysis and Modeling. Springer, (2015) 763–777.)

International conference

1. F.BENSOUICI " **Thin films TiO_2 and Cr Doped TiO_2 Nanostructures as Efficient Corrosion Protection for Stainless Steel** International Conference on Electron Devices and Applications (ICEDA 2021), **NANJING, CHINA | AUGUST 14-16, 2021.**
2. S. IAICHE*(1), D. ALAMARGUY(2), N. GABOUZE(3), AI AYESH(4), A. DJELLOUL(1), C. BOUMAZA(1), D. HAMANA(5), F. BENSOUICI(6), A. SERRAR(7) and A. BOUABELLOU(8). "INFLUENCE OF Zn SOLUTION CONCENTRATION ON THE GROWTH OF Zn-Sn-O NANOSTRUCTURE THIN FILMS", 2019 International Conference on Materials and Nanomaterials (MNs-19), avec proceding
3. IAICHE, S., GABOUZE, N., HAMANA, D., DJELLOUL, A., SERRAR, A., BENSOUICI, F., ... & BOUABELLOU, A." ZnO: Mg/ZnAl2O4 heterostructures formation on silicon substrate for Ammoniac gas detection" , 2019 International Conference on Materials and Nanomaterials (MNs-19),
4. Samia Ladjouzi, R. Tala-ighil, L. Guerbous, F. Bensouici "Sol Gel Synthesis and Thermal Treatment Effect on Ce^{3+} Doped $GdBO_3$ Nanoclusters Obtained in Silica Glass" Proceedings of the 4^{TH} international symposium on materials and sustainable developement; volume 1: NANOTECHNOLOGY AND ADVANCED MATERIALS. Pages 152-161. https://link.springer.com/chapter/10.1007/978-3-030-43268-3_13

5. **F. Bensouici**, A. Mammeri,A. Aouina, R. Tala-Ighil, M. Toubane,D. Houanouh "Ag-Er Co-Doped TiO2 Thin Films" *International Conference on Nanomaterials and Renewable Energies ICNRE 2018, 15-17 October 2018. Skikda, Algeria ,P64*

6. M. Benyakhlef, F. Bensouici, R. Tala-Ighil, M. Toubane. "Preparation and Characterization of Nd Doped Tio2 Thin Films", *International Conference on Nanomaterials and Renewable Energies ICNRE 2018, 15-17 October 2018. Skikda, Algeria, P*68.

7. S. Boukerche , M.Bououdina, A. Himour , S. Ouchenane1, F. Bensouici "Investigation of the Effect of ZnO/TiO2 Phase Composition on Corrosion of Stainless Steel 304" *International Conference on Nanomaterials and Renewable Energies ICNRE 2018, 15-17 October 2018. Skikda, Algeria, P*94.
8. M. Toubane, F. Bensouici, R. TalaIghil , M. Bououdina, "Effect of thermal treatment on the properties of ZnO thin films" *International Conference on Nanomaterials and Renewable Energies ICNRE 2018, 15-17 October 2018. Skikda, Algeria, P*335
9. S. Bouhouche, A. Otmani1, F. Bensouici, M. Toubane, R Tala-Ighil. R. Kalai "***Synthesis, Characterization, and Photocatalysis of ZnO and Er-Doped ZnO thin films"*** *Proceeding of the 5th international conference on maintenance and industrial safty CIMSI 2019;P 145*

10. D.Haouanoh, M. Toubane, **F.Bensouici**, R.TalaIghil, A. P.Samantilleke,, (2017, December). "Study of Temperature and Concentration Effects for CZTS Layers using Spray Pyroly- sis." In 2017 International Renewable and Sustainable Energy Conference (IRSEC) (pp. 1-6). IEEE.

11. B. Messaid, C. Le Paven, R. Tala-ighil, R. Benzerga, F. Marlec, L. Legendre and **F. bensouici** "The epitaxial titanium nitride layer deposited onto the MgO substrate used as rear contact for CISe solar cell",second international conference on electrical engineering,ICEEB18, de- cembre, biskra 2018.

12. **Fayçal bensouici**, M. benyakhlef, M. bououdina, R. tala-ighil, M. toubane and B. bouaouina

« Structural, morphological and photocatalytic properties of Fe doped TiO_2 thin layers", Science and Applications of Thin Films, Conference & Exhibition (SATF 2018), Izmir Insti- tute of Technology., Izmir, Turkey, September 17-21, 2018

13. **F.Bensouici**, R.Aouina, R.Tala-Ighil, S.Kebaili, M.Toubane, B.Bouauina, M.Benyakhlef ; «Effect of Er-Doped TiO_2 Thin Films on optical, microstructural and photocatalytic activity pre- pared by sol-gel », Progress in Applied Surface, Interface and Thin Film Science (SURFINT- SREN V) 20- 23 novembre 2017, Florence, Italy.
14. D. Haouanoh, R. TalaIghil, **F. Bensouici** and M. Toubane " Influence of Deposition Time on the CdS Thin Films Prepared by a Chemical Bath Deposition (CBD)" SMSD 2017 Third International Symposium on Materials and Sustainable Development. 7&8 november 2017, boumerdes, Algeria.
15. M. Toubane, R.Tala-Ighil, **F.Bensouici**, M.Bououdina, W.Cai, S.Liu, M.Souier, A.Iratni ; «Aging Time Effect on ZnO Thin Films Photocatalytic Activity Synthesized by Sol-Gel Dip Coating Method », ANM 2016, 25-27 july 2016, University of Aveiro, Aveiro-Portugal.

16. **F.Bensouici**, A. A.Dakhel, A.Iratni, R.Tala-Ighil, M.Toubane, M. Bououdina, A.Slimani ; « Optical, structural and photocatalysis properties of Cu-Doped TiO_2 Thin Films », Progress in Applied Surface, Interface and Thin Film Science (SURFINT-SREN IV) 23- 26 novembre 2015, Florence, Italy.

17. D.Haouanoh, M.Toubane, R. Tala Ighil, **F. Bensouici**, A.Slimani ; « Influence de la tempé- rature sur les couches minces de CZTS » Le 1er Concongrès Algérien De Caractérisation, Propriétés Et Modélisation De Matériaux Et Des Matériaux Composites (CACPM3C-1'2015) 19 au 21 Mai 2015.

18. M.Toubane, R. Tala Ighil, **F. Bensouici**, A.Iratni, A. Azizi and D. Haouanoh, « thickness effect on photocatalytic activity of ZnO Thin Films » journées internationales de cinétique, catalyse et calorimétrie « les 3C au service du génie des Procédés » 02 au 04 Mai 2015, USTHB, Alger.

19. **F. Bensouici**, T. Souier, A. Iratni, A.A. Dakhel, R. Tala-Ighil and M. Bououdina, Effect of acid nature in the starting solution on surface and photocatalytic properties of TiO_2 Thin Films, 3rd International Laboratory Technology Conference & Exhibition (LABTECH2014) OCT 28-30, 2014, KINGDOM OF BAHRAIN.

20. **F.Bensouici**,A,Iratni, M. Toubane, R.Tala-ighil,A.slimani, "Photocatalytic behavior of Ag do- ped TiO_2 thin films,1st International conference on materials & Environmental Engineering- ICM3E'14, November $23^{rd} - 25^{th}$ 2014, Algiers, Algeria

21. **F.Bensouici**, M. Bououdina, A. Iratni, M. Toubane, R. Tala-Ighil " Effect of thickness on photocatalytic activity of TiO_2 thin films", 13th International conference on clean energy, istanbul, June 8-12, 2014.

22. M. Toubane, I. Aicha, **F .Bensouici**, A. Slimani, R.Tala-ighil ,"Studies of optical properties of the Al doped ZnO thin films prepared by sol-gel method associated with dip coating ", 13th International conference on clean energy, istanbul, June 8-12, 2014

23. M. Toubane, R.Tala-ighil , **F. Bensouici**,A. Iratni , A.Azizi , A. slimani, " Photocatalytic Degradation of Methylene Bleue by ZnO Thin Films", International conference on materials & Environmental Engineering- ICM3E'14, November 23rd– 25th 2014, Algiers, Algeria

24. M.Toubane, A.Iratni, R.Tala-ighil, A.Slimani and **F.Bensouici**, « Etude de l'influence du dopage sur les propriétés structurales et optiques des couches minces ZnO », Second in- ternational Conference on New materials and active devices » NMCA'2014 May 25th-26th 2014, Oum El Bouaghi Algeria.

25. R.Tala-Ighil, B.Larab, S.Bachir, A.Iratni, **F.Bensouici**, M.Toubane, A.Slimani, « Effect of zinc acetate precursor concentration in structural properties of tin doped and undoped zinc oxide layers », 2nd International Congress on Energy Efficiency and Energy relates Mate- rials, ENEFM14, oct 16-19, 2014, oludeniz-Turkey.

26. R.Talaighil, M.Toubane, **F.Bensouici**, A.Slimani, A. Iratni, S.Sali, "AMPS Numerical simu- lation for CZTS based solar cells", International conference on materials & Environmental Engineering- ICM3E'14, November 23rd-25th 2014, Algiers, Algeria

27. M.Toubane, A.Iratni, **F.Bensouici** , R Tala-Ighil,A.Slimani,N.Arabi ; « Elaboration Et Carac- terisation De Couches Minces ZnO» Premières journées internationales de physique uni- versité constantine 1 (JIPC 2013)

28. **F.Bensouici**, A.Iratni, M.Toubane, R.Tala-Ighil, A.Slimani « Propriétés des couches minces de TiO_2 élaboré par la voie sol gel» International Symposium on Materials and Sustainable development, Boumerdes, Algeria, May 06–09, 2013.

29. R.Tala-Ighil , F.Djeridane, K.Allache ,A.Iratni And **F.Bensouici** « characterisation of glass properties by using DTA Method » International Symposium on Materials and Sustainable developement, Boumerdes, Algeria, May 06–09, 2013.

30. F.Bensouici ; A.Iratni ;N.Arabi ; M.Toubane And R.Tala-Ighil « Preparation and Characteri- zation of thin films Ag/TiO_2 obtained by the sol-gel method ». 2ndInternational Advances in Applied Physics and Materials Science Congress (APMAS 2012), Antalya, Turkey.24–28 April 2012.

31. A.Iratni , R.Tala-Ighil, **F.Bensouici** ; N.Arabi, A.Slimani "Optimization of ZnO window layer for silicon and (CIS) based solar cells" international work shop on advanced materials, IWAM 4, Ras El Khaima, UAE 19–21 feb 2012.

32. R.Tala-Ighil ; A.Iratni , **F.Bensouici** ;N.Arabi, A.Slimani " Effect of CdS replacement by Cd- free buffer layer onto (CIS) solar cell" international work shop on advanced materials, IWAM 4, Ras El Khaima, UAE 19-21 feb 2012.

33. **F.Bensouici**, A.Iratni, N.Arabi « Structural properties study of TiO_2 thin film »work shop IWAM 2011 ; 3rd annual international Workshop on Advanced Material ;20–22 feb 2011.

34. F.Guerfa, **F.Bensouici**, S.Achour and A.Harabi. "On the dissociation of Dolomite to MgO and $CaCO_3$". Conférence Internationale sur la physique et ses application CIPA'2003, 8–10 Décembre 2003.

Supervision after university accreditation

Doctoral thesis

1. BENYAKHLEF Mustafa, doctorat en science "Co-dopage néodyme/métaux de transitions des couches minces de TiO_2 pour application photo-catalyse », état: finalisation de thèse.

2. AOUINA Riad, doctorat en science "Caractérisation des couches minces de TiO_2 co-dopées par Er/(métaux, non métaux) obtenues par voie sol-gel" , état: finalisation de thèse.

3. SERBOUTE Walid, doctorat 3émé cycle LMd (**école doctoral (2018/2019)** El'Djelfa) "Préparation des multicouches minces des oxydes semi-conducteurs pour application photocatalytique".

Master thesis defended

1. KEBAILI SELMA "Effet de dopage à l'Erbieum sur les propriètés physique et photocatalytique de couches minces de TiO_2" . 02/07/2017.
2. DAOUDI MERIEM "Effet du dopage par le Néodyme sur les propriétés physiques et photocatalytiques des couches minces de TiO_2" . 21/06/2018.

3. MAMMERI AHLEM " Propriétés physique et photocatalytique des couches minces de TiO_2 cocopées par l'Erbium et l'Argent" . 21/06/2018.
4. DJEGHADER SIHAM "Elaboration et caractérisation des couche minces de SnO_2 non dopées et dopées Cuivre." 21/06/2018.
5. ZAHRI Ibtissam & FERCHANI Souad « Synthèse et caractérisation des couche mince Fe / TiO_2 par vois sol gel." .../06/ 2019.
6. ZEDIRA Zineb & KEZIZ Soumia "Préparation et caractérisation des couches minces mixtes SnO_2 / TiO_2 par voie sol-gel." .../09/2020.
7. KEZIZ Dellel & SOUIS Siham « Prépartion et caractérisation des couches minces mixtes ZnO / TiO_2 par sol gel. » .../09/2020.
8. ABDI khawla & DJABALLI Hada "Préparation et caractérisation des Couches minces de $Ti0_2$ dopées Chrome." .../07/2021.
9. REGHIS Imane & KHEMISSA khawla "Préparation et caractérisation des couches minces de TiO_2 dopées Nickel. » .../07/2021.

Research projects

1. **2012 - 2013**: membre dans un PNR sous le code 8/U35/4754 "COUCHES MINCES POUR PHOTOCATALYTIQUE ET PHOTOVOLTAÏQUE" sous la direction de PROf aicha iratni.
2. **2012-2016:** membre dans un PRFU sous le code **D00320110021,** INTITULE : **"**Oxydes métalliques et non métallique (TiO_2-SiO_2) en Couches minces pour photocatalytique et photovoltaïque". Chef du projet Prof: IRATNI Aicha.

3. **2016-2020:** membre dans un PRFU sous le code **A16N01UN350120150003,** intitulé "Nanomatériaux dédiés aux cellules solaires et la photocatalyse"; chef du projet Dr: Razika TALA-IGHIL.
4. **2020- present:** membre dans un PRFU sous le code **A16N01UN350120200001** Intiltulé "Cellules solaires pérovskite et organiques. Photocatalyse par TCO dopé ." ; chef du projet Prof: Razika TALA-IGHIL.

Participation in scientific committees

1. **Novembre 2017:** membre du comité scientifique de "3rd International Symposium on Materials and Sustainable Developement **3CIMDD**" 07 & 08 Novembre 2017, Boumerdes – Algeria.
2. **Decembre 2018:** membre du comité scientifique de septième " Séminaire National sur les Matériaux, Procédés et Envirennement **SNMPE7"** tenu le 04 et 05 décembre 2018 à Boumerdes.
3. **Novembre 2019:** membre du comité scientifique de "4rd International Symposium on Materials and Sustainable Developement **4CIMDD**" 12 - 14 Novembre 2019, Boumerdes – Algeria.

DOCTORAL JURY AND UNIVERSITY ACCREDITATION

Après l'habilitation universitaire, j'était membre dans plusieurs jury de doctorat et habilitation universitaire:

doctoral jury

1. **04/07/2018**: jury de souteance de Mr GHRIEB Sifi, université de annaba.
2. **09/10/ 2018:** jury de soutenance de M^{me} BRAHIMI Aicha, université de boumerdes.
3. **29/09/2019:** jury de soutenance de M^{elle} FRAOUCENE Henia, université de tizi ouzou.
4. **07/10/ 2020:** jury de soutenance de Mr AMARI Rabie, université de M'sila.
5. **15/01/2020:** jury de soutenance de M^{me}NEHAOUA Nadia, université annaba.
6. **26/11/2020:** jury de soutenance de Mr KERAMI Ahmed, université de béjaia.
7. **08/07/2021:** jury de soutenance de M^{elle} RABHI Souhila, université de Béjaia.

University accreditation jury

1. 27/02/2018: Habilitation de Mr BELATRECHE Mohamed Salah, université de Boumerdes.
2. 25/06/2018: Habilitation de M^{elle} BELHOUCIF Rekia, université de Boumerdes.
3. 11/09/2019: Habilitation de Mr MEGLALI Omar, université de M'sila.
4. 27/12/2020: Habilitation de M^{me} IAICHE Sabrina, université de Khenchela.

langage

–Arabic, mother langage

–French, very good

–English, good

Skill

–Mastered X-ray diffraction analysis (powder and thin films) and data processing by high schore plus.

–Mastered of UV-Visble analysis and processing of optical properties.

–Elaboration of the oxides by soft chemistry (sol-gel).

–Characterization by SEM.

framing

- More than twenty masters have been supervised and doctoral students in the process of finalizing their theses.
- Member in the doctoral school of El djelfa, physics of materials 2018.
- https://scholar.google.com/citations?user=ZWu-sJgAAAAJ&hl=fr
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