

Curriculum Vitae



- **Name:-** Asmaa Kadim Ayal
- **Educational qualification:-** PhD **University:-** UPM Universiti
- **Specialty:-** Nanoparticles in physical chemistry
- **Position:-** Assistant Professor
- **Address:-** Department of Chemistry, College of Science for Women, University of Baghdad, Baghdad, Iraq.
- **H-Index :** 11 in Scopus, 10 in Publons, and 12 in Google Scholar
- **Teaching area:-**
 - Undergraduate:- √
 - Postgraduate:- √
 - **Supervision of an international master student from Malaysia + Supervision of a local master student and PhD student**
 - **Research interests:-** preparation and characterizations of nanomaterials and their application
 - **Publications:-** 37 paper
 - **Other scientific activities: Participation in international and local conferences and workshops**
 - **Committees: - Chairman and member of many committees**
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- https://www.researchgate.net/profile/Asmaa_Ayal
- <https://scholar.google.com/citations?user=bYE05tkAAAAJ&hl=en>
- <https://www.scopus.com/authid/detail.uri?authorId=57105699400>
- <https://publons.com/researcher/1520022/asmaa-kadim-ayal/publications/>

Publications

1. Araa Mebdir Holi, Zulkarnain Zainal, Asla A. Al-Zahrani, Asmaa Kadim Ayal, Asmaa Soheil Najm, Effect of Varying AgNO_3 and $\text{CS}(\text{NH}_2)_2$ Concentrations on Performance of $\text{Ag}_2\text{S}/\text{ZnO}$ NRs/ITO Photoanode, *Energies*. 15, 8, 2022.
2. Asmaa KadimAyal,ZulkarnainZainal, AraaMebdirHoli, Hong-NgeeLim, ZainalAbidinTalib, Ying-ChinLim, Sensitization of TiO_2 nanotube arrays photoelectrode via homogeneous distribution of CdSe nanoparticles by electrodeposition techniques. *Journal of Physics and Chemistry of Solids*. 153, 2021, 110006.
3. Asmaa Kadim Ayal, Ayat Khairi Hashim, Ahmed Mudhafar Mohammed, Ahlam Mohammed Farhan, Araa Mebdir Holi & Ying-Chin Lim, Electrochemical Deposition of Cu-Nanoparticle-LoadedCdSe/ TiO_2 Nanotube Nanostructure as Photoelectrode, *Journal of Electronic Materials* volume 50, pages5161–5167 (2021)

4. Lim Ying Chin, Najaa Mustaffa, Asmaa Kadim Ayal, Devagi Kanakaraju, Lim Ying Pei, Structural Characterization and Visible Light-Induced Photoelectrochemical Performance of Fe-Sensitized TiO₂Nanotube Arrays Prepared via Electrodeposition, *Malaysian Journal of Chemistry*, 2021, Vol. 23(2), 173-182
5. Tabarak Jafar Awaid, Asmaa Kadim Ayal, Ahlam Mohammed Farhan, Muna Sarhan Sando and Lim Ying Chin, Effect of Electrolyte Composition on Structural and Photoelectrochemical Properties of Titanium Dioxide Nanotube Arrays Synthesized by Anodization Technique. *Baghdad Science Journal*, 2020. 17(4):1183-1190
6. Chin, L.Y., Harun, N.F.A., Ayal, A.K., Mohd, Y., Pei, L.Y. Effect of photoelectrochemical electrolyte additives on the photoconversion efficiency of tungsten trioxide loaded titania nanotubes prepared via electrodeposition. *International Journal of Engineering and Advanced Technology*, 2019, 9(1), pp. 5479–5484
7. Asmaa Kadim Ayal, Ying-Chin Lim, Ahlam Mohammed Farhan, (2018) Sensitization of Mn with CdS nanoparticles via electrochemical deposition technique for photocurrent enhancement of nanomaterial's-sensitized photoelectrochemical cells. *Research on Chemical Intermediates*. (12), (2018): 7231-7240
8. Siti Sarah Binti Ismail, Zainiharyati Mohd Zain, Asmaa Kadim Ayal, Lim Ying Chin, Effect of gold solution concentration on the formation and photoelectrochemical properties of gold deposited titanium dioxide nanotubes. *Malaysian Journal of Analytical Sciences*. 22 (5), (2018): 750 – 757.
9. Asmaa Kadim Ayal, Ahlam Mohammed Farhan, Ying-Chin Lim, Effect of Deposition Time of Mn on Photoelectrochemical Properties of Mn/TiO₂ Nanotubes, *International Journal of Engineering and Technology(UAE)*, 7 (4.14), (2018): 454-457
- 10 . Araa Mebdir Holi, Asmaa Kadim Ayal, Anwar Ali Baqer, Construction of ZnO-Nanoflowers Photoanode for Photoelectrochemical Cell, *Journal of Physics: Conference Series*, 1234, 1, (2019):012056
- 11- Araa Mebdir Holi, Zulkarnain Zainal, Asmaa Kadim Ayal, Sook-Keng Chang, Hong Ngee Lim, Zainal Abidin Talib, Chi-Chin Yap, Ag₂S/ZnO Nanorods Composite Photoelectrode Prepared by Hydrothermal Method: Influence of Growth Temperature, *Optik*, 184, (2019): 473-479
- 12- Iman Mehdi Mohammed Hasan, Naser D Shilan, Shetha F Al-Zubidy, Manal O Hamzah, Nafeesa J Kadhim, Asmaa K Ayal, Asmaa M Saleh, Doaa Hashim Qasim, Synthesis ,Characterization of Some New Resins Containing Heterocyclic Rings by Steps Polymerization Starting from Phenolic Schiff Base Derivatives with Studying Their Physical Properties, *Journal of Pharmaceutical Sciences and Research*, Vol.11, 2, (2019): 464-470.
- 13- AK Ayal, Effect of Anodization Duration in theTiO₂ Nanotubes Formation on Ti Foil and Photoelectrochemical Properties of TiO₂Nanotubes, *Al-Mustansiriyah Journal of Science* 29 (3), (2019): 77-81
- 14- AM Holi, Z Zainal, AK Ayal, SK Chang, HN Lim, ZA Talib, CC Yap, Ag₂S/ZnO Nanocomposite Photoelectrode Prepared by Hydrothermal Method Based on Influence of Growth Temperature <https://doi.org/10.1016/j.ijleo.2019.03.010>

- 15- Araa Mebdir Holia, Zulkarnain Zainalb, Asmaa Kadim Ayald, Sook-Keng Changb, Hong Ngee Limb, Zainal Abidin Talibe, Chi-Chin Yap Effect of heat treatment on photoelectrochemical performance of hydrothermally synthesised Ag₂S/ZnO nanorods arrays, *Chemical Physics Letters* (2018): 100–107.
16. Asmaa Kadim Ayal, (2018) Enhanced Photocurrent of Titania Nanotube Photoelectrode Decorated with CdS Nanoparticles. *Baghdad Science Journal*. 15(1) 2018
17. Asmaa Kadim Ayal, Zulkarnain Zainal, Hong Ngee Lim, Zainal Abidin Talib, Ying-Chin Lim, Sook-Keng Chang, Araa Mebdir Hol, (2018) Fabrication of CdSe Nanoparticles Sensitized TiO₂ Nanotube Arrays via Pulse Electrodeposition for Photoelectrochemical Application. *Materials Research Bulletin*. 106, October 2018, 257-262
18. Nurul Asma Samsudin, Zulkarnain Zainal, Hong Ngee Lim, Yusran Sulaiman, Sook-Keng Chang, Ying-Chin Lim, Asmaa Kadim Ayal and Wardatun Nadrah Mohd Amin, (2018) Capacitive performance of vertically aligned reduced titania nanotubes coated with Mn₂O₃ by reverse pulse electrodeposition. *RSC Advances*. 8 (2018), 23040-23047
19. Ayal, A.K., Zainal, Z., Lim, H.-N., Talib, Z.A., Lim, Y.-C., Chang, S.-K., Samsudin, N.A., Holi, A.M., Amin, & W.N.M. (2016) Electrochemical deposition of CdSe-sensitized TiO₂ nanotube arrays with enhanced photoelectrochemical performance for solar cell application. *J. Mater. Sci. Mater. Electron*. 27(5): 5204–5210.
20. Ayal, A.K., Zainal, Z., Lim, H.-N., Talib, Z.A., Lim, Y.-C., Chang, S.-K., & Holi, A.M. (2017). Photocurrent enhancement of heat treated CdSe sensitized titania nanotube photoelectrode. *Opt Quant Electron*. 49(4): 164.
21. A.M. Holi, Z. Zainal, Z.A. Talib, H.-N. Lim, C.-C. Yap, S.-K. Chang, A.K. Ayal, Hydrothermal deposition of CdS on vertically aligned ZnO nanorods for photoelectrochemical solar cell application, *J. Mater. Sci. Mater. Electron*. 27 (2016) 7353–7360.
22. A.M. Holi, Z. Zainal, Z.A. Talib, H.-N. Lim, C.-C. Yap, S.-K. Chang, A.K. Ayal, Enhanced photoelectrochemical performance of ZnO nanorod arrays decorated with CdS shell and Ag₂S quantum dots, *Superlattices and Microstructures*, 103 (2017) 295-303.
23. A.M. Holi, Z. Zainal, Z.A. Talib, H.-N. Lim, C.-C. Yap, S.-K. Chang, A.K. Ayal, Effect of Hydrothermal Growth Time on ZnO Nanorod Arrays Photoelectrode Performance, *Optik* 127 (2016) 11111–11118.
24. Asmaa Kadim Ayal, Adsorption Study of Para Phenylene di amine (PPDA) On Bentonite clay surface, *Baghdad Science Journal* 8, (2011) 982-987.
25. Saadiyah A. Dhahir, Nafeesa J. Kadhim, Asmaa K. Ayal, Sunlight Photocatalytic of dazomet herbicides in aqueous solution, *Journal of Kerbala University* 9 (1), (2011) 182-188.
26. Asmaa Kadim Ayal, SR Bakir, MF Alias, Synthesis and Theoretical Study of 4-(2-methyl-4-oxoquinazoline-3(4H)-yl) Benzoic acid with Some Transition Metal Ions, *Baghdad Science Journal* 10 (3), (2013) 537-546.

27. Asmaa Kadim Ayal, Abbas Ali Salih Al-Hamdani, Shatha F. Nareen, Preparation, Characterization and Structural Studies of Some Phenyl Isothiocyanate Metal Complexes, Eng. & Tech Journal 29, 253- 260.
28. Shetha F. Al-Zobaydiy, Asmaa K. Ayal, Shaimaa R. Bakir, Sanaa H. Salh, Synthesis and Characterization of the Complexes of Some 2-methyl-4-isopropylidene oxazol-5-one Transition Metals with, Journal of Kerbala University, Vol. 11 No.4 Scientific. 2013.
29. Iman M Mohammed Hasan, Shetha F Al-Zobidy, Tamador A Mahmood, Nafeesa J Kadhim, Asmaa K Ayal, Manal O Hamzah, Muna S Sando, Hawraa M Abdulkareem, Asmaa M Saleh, Sanaa H Saleh, Muna S Hadi, Iftikar A Hussien, Doaa H Qasim, Synthesis, Characterization And Study The Antibacterial Activity Of Some Disubstituted-1, 3, 4-Oxadiazole Derivatives, Iraq Journal of Market Research and Consumer Protection, 11, (2019), 170-182.
30. Lim Ying Chin, Nur Farah Atikah Harun, Asmaa Kadim Ayal, Yusairie Mohd, Lim Ying Pei Effect of Photoelectrochemical Electrolyte Additives on the Photoconversion Efficiency of Tungsten Trioxide Loaded Titania Nanotubes Prepared Via Electrodeposition, (IJEAT) ISSN: 2249 – 8958, Volume-9 Issue-1, October 2019.

Conference/ Workshops / Poster:

- 1- Asmaa Kadim Ayal, Ahlam Mohammed Farhan, Ying-Chin Lim, Conference: 2nd International Conference on Applied Sciences & Industrial Technology 13th - 15th November 2018, Swiss-Garden Hotel Melaka, Malaysia.
- 2- Asmaa Kadim Ayal, " Nanotechnology applications and future prospects" on 4-5 June, 2020 by Education College- University of Samarra.
- 3- Araa Mebdir Holi, Asmaa Kadim Ayal, Anwar Ali, 1st international scientific conference on pure science (ISCPSS2019) 23th -24th January 2019, College of Education, University of Al- Qadisiyah.
- 4- Asmaa Kadim Ayal, The 1st International Conference on Safety and Security of the Scientific Applications (ICSSSA) 26th - 27th September- 2018, College of Science, Mustansiriyah University Baghdad, Iraq.
- 5- Asmaa Kadim Ayal, Zulkarnain Zainal, Zainal Abidin Talib, Lim Hong Ngee, Lim Ying Chin, Sook-Keng Chang, Araa Mebdir Holi, The effect of deposition time on the photoelectrochemical properties of CdSe / TiO₂ nanotube. Paper presented at the Fundamental Science Congress 2015:12-13 November, Faculty of Science, Universiti Putra Malaysia).
- 6- Asmaa Kadim Ayal, Zulkarnain Zainal, Zainal Abidin Talib, Lim Hong Ngee, Lim Ying Chin, Sook-Keng Chang, Araa Mebdir Holi, Effect of concentration of SeO₂ on photoelectrochemical properties of CdSe / TiO₂ nanotubes, Poster presenter in The Malaysian Analytical Chemistry Symposium (SKAM29) on 15-17 August, 2016.
- 7- Asmaa Kadim Ayal, Zulkarnain Zainal, Zainal Abidin Talib, Lim Hong Ngee, Lim Ying Chin, Sook-Keng Chang, Araa Mebdir Holi, Influence of voltammetry cycles on structure and photoelectrochemical properties of CdSe-sensitized TiO₂ nanotubes. Poster presenter in Workshop on Advanced Materials Nanotechnology, UPM, WAMN 2016 on 24-25 August, 2016).
- 8- Araa Mebdir Holi, Zulkarnain Zainal, Zainal Abidin Talib, Lim Hong Ngee, Lim Ying Chin, Sook-Keng Chang, Asmaa Kadim Ayal, Sol-gel Hydrothermal Synthesis of ZnO Nanorods Arrays for Efficient Solar

Energy Conversion, Oral presenter in fundamental science conference 2015 (FSC 2015), UPM, Serdang, Malaysia”.

- 9- Araa Mebdir Holi, Zulkarnain Zainal, Zainal Abidin Talib, Lim Hong Ngee, Lim Ying Chin, Sook-Keng Chang, Asmaa Kadim Ayal, Ag₂S/ZnO Nanorods as Efficient Photoanode for Photoelectrochemical Cells, Poster presenter in workshop on advanced materials and nanotechnology 2016 (WAMN 2016).
- 10- Araa Mebdir Holi, Zulkarnain Zainal, Zainal Abidin Talib, Lim Hong Ngee, Lim Ying Chin, Sook-Keng Chang, Asmaa Kadim Ayal, Influence of Growth Temperature on the Morphological, Structural, Optical and Photoelectrochemical Performance of CdS/ZnO/ITO prepared by Hydrothermal Method, Poster presenter in 29th malaysian analytical chemistry symposium (SKAM 29) (15-17 august 2016).
 - "X-Ray diffraction workshop" 23-24 October 2014, Department of Physics, Faculty of Science, Universiti Putra Malaysia
 - Workshop on Advanced Materials and Nanotechnology 25-26 August 2014 (WAMN 2014), Universiti Putra Malaysia
 - Laboratory Safety Course, 29 September- 3 October 2014, Department of Physics, Faculty of Science, Universiti Putra Malaysia
 - Workshop on Advanced Materials and Nanotechnology 24-25 August 2016 (WAMN 2016), Universiti Putra Malaysia
 - Workshop On Article And Journal Writing 12-13 April 2016, Laboratory Material Synthesis & Characterization Institute Of Advanced Technology (ITMA), Universiti Putra Malaysia.