CURRICULUM VITAE

DR. MAZLIANA BINTI AHMAD KAMARUDIN
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ACADEMIC QUALIFICATIONS

2005	Bachelor of Science (Honours) in Physics, Universiti Putra Malaysia.
2010	PhD in Physics, Lancaster University, United Kingdom.

EMPLOYMENT HISTORY

2010- Current	Senior Lecturer, Universiti Putra Malaysia
2012-2016	Postdoctoral Researcher, University of Nottingham, UK
2006-2010	Tutor, Department of Physics, Universiti Putra Malaysia

RESEARCH INTEREST & EXPERTISE

1. Controlled synthesis and surface functionalization of semiconductor quantum dots for tuneable properties
2. Advanced optical and structural characterization of nanomaterials, with emphasis on electron–phonon coupling, surface states, and defect engineering
3. Design and development of nanostructured materials for dye-sensitized solar cells (DSSCs) toward enhanced efficiency and stability

RESEARCH FUNDING

No.	Project Title	Amount	Year	Source of funding
1.	Investigation on graphene quantum dots synthesis from oil palm trucks for high efficiency electromagnetic shielding polymer	RM143,923.00	2023-2026	MoHE, FRGS
2.	Impact of shell thickness on exciton and paramagnetic relaxation of PbS/Fe3O4 quantum dots in mesoporous silica nanoparticles	RM90,200	2019-2021	MoHE, FRGS
3.	Pemerkasaan Pendidikan Sains, Teknologi, Kejuruteraan dan Matematik (STEM) kearah Pembangunan		2019-2020	UCTC UPM

	UPMSTEMreneurship melalui modul Eksplorasi Digital STEM			
4.	Accessing the Exciton and Quantum Confinement in PbS/MnS Quantum Dots by Low Temperature Photoluminescence	RM25,000	2018- 2020	GP-IPS
5.	Enhancing Quantum Yield Emission of PbS/MnS Core Shell Quantum Dots for Functional Contrast Agent Prepares via Cation Exchange Mechanism	RM50,000	2017-2019	UPM Putra Grant
6.	Surface Modification of Mn-Doped PbS Quantum Dots with Calixarene for Removal of Polyaromatic Hydrocarbons (PAHs) from Wastewater	RM95,050	2017-2019	MoHE, FRGS
7.	Surface and interface phenomena study on copper zinc selenide (CZnSe) chalcogenide semiconductor thin film for solar cells devices.	RM110,000	2013-2015	MOHE, FRGS
8.	Scattering mechanism study of polycrystalline metal chalcogenide nanoparticles	RM30,000	2012-2014	UPM , RUGS
9.	Synthesis of CdS Nanoparticles by a Thermal Treatment Method	RM30,000	2011-2013	UPM , RUGS

PROFESSIONAL MEMBERSHIP

2019-present : Member of The Malaysian Solid-State Science and Technology Society (MASS661)

AWARDS

- Gold Medal (International) – Self-administered Home Experiments: An Alternative Assessment for Physics Course During Pandemic Time, Putra InnoCreative Carnival in Teaching and Learning, 2021
- Gold Medal (National) – Designing an Efficient Live Cell Bio-imaging using MnTe- and SiO_2 Capped PbS Quantum Dots via Aqueous Synthesis, Materials Technology Challenges, 2019
- Gold Medal (University) – AR Crystal: Augmented Reality for Mobile Learning, Putra InnoCreative Carnival in Teaching and Learning, 2018
- Silver Medal (International) – Virtual Industry Collaborative Engagement Experience-Based Learning During the Covid-19 Pandemic, Putra InnoCreative Carnival in Teaching and Learning, 2021
- Silver Medal (National) – Discovering Temperature Dependent Behaviour of PbS Quantum Dots Charge Carriers for Potential Photovoltaic Application, Materials Technology Challenges, 2019
- Silver Medal (National) – Growth and Optical Properties of GaSb/GaAs Quantum Dots, Pameran Rekacipta, Penyelidikan dan Inovasi Malaysia, 2012
- Bronze Medal (International) – Green Synthesis of pH Responsive CQDs from Coffee Waste, Anugerah Penyelidikan, International Material Technology Challenges 10.0 MASS, 2025
- Bronze Medal (International) – Effect of Carbonization Temperature on the Synthesis of CQDs from Coffee Waste, Anugerah Penyelidikan, International Material Technology Challenges 10.0 MASS, 2025
- Bronze Medal (International) – Collaborative of Augmented Reality in Teaching, IUCEL, 2018

PUBLICATIONS (last 5 years)

Google scholar: H Index: 17 | Citation: 1067

[1] N. A. N. Asri, Y. W. Fen, N. I. M. Fauzi, N. A. Kamaruzzaman, R. E. M. Khaidir, H. S. Hashim, M. F. Anuar, M. A. Z. M. Zailani, A. D. I. M. Fadzil, N. N. A. M. Basari, M. A. Kamarudin, and H. Abdullah, "Mango peels-assisted synthesis of carbon quantum dots for potential optical sensing of diazinon," *Scientific Reports*, vol. 16, no. 1, p. 4341, 2026.

[2] N. A. Kamaruzzaman, Y. W. Fen, N. I. M. Fauzi, N. A. N. Asri, H. S. Hashim, M. F. Anuar, R. E. M. Khaidir, M. A. Z. M. Zailani, N. N. A. M. Basari, A. D. I. M. Fadzil, M. A. Kamarudin, and H. Abdullah, "Harnessing *Arachis hypogaea* shells waste into carbon quantum dots for surface plasmon resonance detection of 2-nitrophenol," *Diamond and Related Materials*, vol. 162, p. 113262, 2026.

[3] M. K. Sulayman, F. K. Umar, B. Lukuman, M. K. A. Karim, N. A. Muhammad, I. Kamal, C. A. C. Abdullah, J. M. Radzi, and M. A. Kamarudin, "Radiation dose of abdominal and lung computed tomography based on body mass index as an indicator," *Malaysian Journal of Medical Sciences*, vol. 32, no. 4, p. 156, 2025.

[4] M. S. Zaini, J. Y. C. Liew, S. Paiman, T. S. Tee, and M. A. Kamarudin, "Solvent-dependent photoluminescence emission and colloidal stability of carbon quantum dots from watermelon peels," *Journal of Fluorescence*, vol. 35, pp. 245–256, 2025.

[5] I. Lawal, S. Shafie, S. S. Pandey, H. Jafaar, M. A. Mustafa, I. O. Abdulmalik, I. Ismail, M. A. Kamarudin, I. S. M. Noor, F. Ahmad, and X. Liu, "The effect of titanium (IV) chloride surface treatment and titanium dioxide/graphenated carbon nanotube composite photoanode to enhance charge transport and light harvesting of bifacial dye-sensitized solar cell," *Solar Energy*, vol. 294, p. 113495, 2025.

[6] I. Lawal, S. Shafie, S. S. Pandey, H. Jafaar, M. A. Mustafa, I. Ismail, M. A. Kamarudin, I. S. M. Noor, X. Liu, H. A. AlSultan, S. Babani, I. B. Abdulhamid, and N. Norddin, "Maximizing solar energy harvesting: Enhancing the efficiency of bifacial dye-sensitized solar cells with graphenated carbon nanotube composites in multi-layered stacked photoanode," *Optical Materials*, vol. 160, p. 116721, 2025.

[7] S. Dhanasegaran, Y. J. Low, K. H. Chin, N. H. Osman, M. A. Kamarudin, Y. W. Fen, I. S. M. Noor, M. H. Ab Ghani, H. K. Lee, S. M. Praveena, T. Sudiro, Z. A. Talib, and J. Y. C. Liew, "Formation of zeolitic imidazolate frameworks-8 (ZIF-8) using microwave assisted hydrothermal technique," *Macromolecular Symposia*, vol. 414, p. 2400066, 2025.

[8] M. S. Zaini, J. Y. C. Liew, S. Paiman, T. S. Tee, and M. A. Kamarudin, "Impact of carbon concentration on optical and zeta potential properties of carbon quantum dots," *Fullerenes, Nanotubes and Carbon Nanostructures*, 2024.

[9] A. S. Asyikin, A. A. Latif, M. K. Halimah, M. H. M. Zaid, M. A. Kamarudin, M. F. Faznny, S. N. Nazrin, and I. Zaitizila, "Structural and optical properties of samarium doped silica borotellurite glasses for optical switching application," *Optics & Laser Technology*, vol. 168, p. 109857, 2024.

[10] M. S. Zaini, J. Y. C. Liew, S. Paiman, T. S. Tee, and M. A. Kamarudin, "Solvent-dependent photoluminescence emission and colloidal stability of carbon quantum dots from watermelon peels," *Journal of Fluorescence*, pp. 1–12, 2023.

[11] N. Z. Rosly, A. H. Abdullah, M. A. Kamarudin, S. E. Ashari, and S. A. A. Ahmad, "Adsorptive removal of methyl orange dye in aqueous solutions using calix[4]arene-modified lead sulphide: Insight into response surface methodology, isotherm and kinetic studies," *AQUA—Water Infrastructure, Ecosystems and Society*, vol. 72, pp. 2293–2312, 2023.

[12] Y. J. Low, J. Y. C. Liew, M. A. Kamarudin, H. N. Lim, F. D. Muhammad, K. P. Lim, M. H. M. Zaid, T. F. Choo, H. K. Lee, Y. W. Fen, S. Hayase, and Z. A. Talib, "Synthesis of cesium silver bismuth bromide double perovskite nanoparticles via a microwave-assisted solvothermal method," *Materials Today Chemistry*, vol. 29, p. 101477, 2023.

[13] Y. J. Low, J. Y. C. Liew, Z. A. Talib, H. N. Lim, M. A. Kamarudin, T. F. Choo, Y. W. Fen, H. K. Lee, B. Salisu, and I. G. Shitu, "Investigation of CsBr:$BiBr_3$ precursor ratio concentration on cesium bismuth bromide perovskite formation," *Chemical Physics*, vol. 566, p. 111791, 2023.

[14] N. D. Halim, M. S. Zaini, Z. A. Talib, J. Y. C. Liew, and M. A. Kamarudin, "Study of the electron-phonon coupling in PbS/MnTe quantum dots based on temperature-dependent photoluminescence," *Micromachines*, vol. 13, no. 3, p. 443, 2022.

[15] A. Murad, J. Y. C. Liew, M. H. Yaacob, I. M. Noor, N. H. Osman, M. A. Kamarudin, S. T. Tan, H. K. Lee, Z. A. Talib, M. T. Alresheedi, and M. A. Mahdi, "Effect of nickel ion concentration on structural, optical and electrical properties towards Ni–H_3BTC-MOF formation for nonlinear saturable absorption phenomenon," *Journal of Physics and Chemistry of Solids*, vol. 167, p. 110743, 2022.

[16] N. I. M. Fauzi, Y. W. Fen, J. Abdullah, M. A. Kamarudin, N. A. S. Omar, F. B. K. Eddin, N. S. M. Ramdzan, and W. M. E. M. Daniyal, "Evaluation of structural and optical properties of graphene oxide-polyvinyl alcohol thin film and its potential for pesticide detection using an optical method," *Photonics*, vol. 9, p. 300, 2022.

[17] Y. J. Low, J. Y. C. Liew, Z. A. Talib, H. N. Lim, M. A. Kamarudin, K. P. Lim, H. K. Lee, I. S. M. Noor, and B. Salisu, "Strain-induced cesium bismuth bromide perovskite/bismuth oxide bromide composite with enhanced optical properties," *Materials Today: Proceedings*, vol. 60, no. 2, p. 1068, 2022.

[18] N. Z. Rosly, S. Ishak, A. H. Abdullah, M. A. Kamarudin, S. E. Ashari, and S. A. A. Ahmad, "Fabrication and optimization calix[8]arene-PbS nanoadsorbents for the adsorption of methylene blue: Isotherms, kinetics and thermodynamics studies," *Journal of Saudi Chemical Society*, vol. 26, no. 1, p. 101402, 2022.

[19] A. A. Latif, A. S. Asyikin, M. K. Halimah, M. H. M. Zaid, M. A. Kamarudin, M. F. Faznny, S. N. Nazrin, and I. Zaitizila, "Structural, linear and nonlinear optical properties of samarium doped tellurite based glasses for potential optical switching application," *SSRN*, p. 4334095, 2022.

SUPERVISION

Completed

Category	PhD	Master
Chairman	1	2
Member	6	6

Current Student

Category	PhD	Master	MSKK
Chairman	-	1	2
Member	3	3	-