

CURRICULUM VITAE



A. BUTIR-BUTIR PERIBADI <i>(Personal Details)</i>			
Nama Penuh <i>(Full Name)</i>	MUHAMMAD KHALIS ABDUL KARIM		Gelaran <i>(Title)</i> : Associate Professor
No. MyKad / No. Pasport <i>(Mykad No. / Passport No.)</i>	Warganegara <i>(Citizenship)</i>	Bangsa <i>(Race)</i>	Jantina <i>(Gender)</i> MALE
85101605xxxx	MALAYSIAN	MALAY	Tarikh Lahir <i>(Date of Birth)</i> 16 OCTOBER 1985
Jawatan <i>(Designation)</i>	Gred <i>(Grade)</i>		
Associate Professor (A04729)	DS54(SSM)		

Alamat Semasa <i>(Current Address)</i>	Jabatan/Fakulti <i>(Department/Faculty)</i>	E-mel dan URL <i>(E-mail Address and URL)</i>
B2-23A-01, Kenwingston Square Garden, Cyber 9, 63000, Cyberjaya, Selangor.	Department of Physics, Faculty of Science, Universiti Putra Malaysia, 43400 Serdang, Selangor.	E-mail: mkhalis@upm.edu.my URL: N/A H/P: 019-2140612

Kepakaran <i>(Expertise)</i>	Orcid ID: https://orcid.org/0000-0002-5357-4193
Medical physics	H-Index (SCOPUS): 17
Radiation physics	https://www.scopus.com/authid/detail.uri?authorId=57211921340
Nuclear Physics	H-Index (G. Scholar): 20 (https://shorturl.at/2oCrd)
Radiological physics	
Medical imaging	

B. KELAYAKAN AKADEMIK <i>(Academic Qualification)</i>			
Nama Sijil / Kelayakan <i>(Certificate / Qualification obtained)</i>	Nama Sekolah Institusi <i>(Name of School / Institution)</i>	Tahun <i>(Year obtained)</i>	Bidang pengkhususan <i>(Area of Specialization)</i>
DOCTORAL OF PHILOSOPHY	UTM, MALAYSIA	2017	PHYSICS
MASTER OF SCIENCE	UTM, MALAYSIA	2014	PHYSICS
BACHELOR	UKM, MALAYSIA	2008	DIAGNOSTIC IMAGING & RADIOTHERAPY

C. KEMAHIRAN BAHASA (<i>Language Proficiency</i>)					
Bahasa / <i>Language</i>	Lemah <i>Poor (1)</i>	Sederhana <i>Moderate (2)</i>	Baik <i>Good (3)</i>	Amat Baik <i>Very good (4)</i>	Cemerlang <i>Excellent (5)</i>
English				/	
Bahasa Melayu				/	
Lain-lain (<i>other</i>):				-	

D. PENGALAMAN PEKERJAAN (<i>Past Employment</i>)				
Majikan / <i>Employer</i>	Jawatan / <i>Designation</i>	Jabatan / <i>Department</i>	Tarikh lantikan / <i>Start Date</i>	Tarikh tamat / <i>Date Ended</i>
Universiti Putra Malaysia	Associate professor	Department of Physics, Faculty of Science	Mei/2023	Current
Universiti Putra Malaysia	Senior lecturer	Department of Physics, Faculty of Science	Nov/2017	April/2023
Ministry of Health Malaysia	Senior Medical Physicist	National Cancer Institute, Putrajaya	Nov/2016	Oct/2017
Ministry of Health Malaysia	Medical physicist	Johor State Health Department	Feb/2009	Oct/2016
Mahkota Medical Centre	Executive	Department of Radiology, Malacca	Jun/2008	Feb/2009

E. PENGALAMAN SAINTIFIK DAN PENGKHUSUSAN (<i>Scientific experience and Specialisation</i>)				
<i>Organization</i>	<i>Position</i>	<i>Start Date</i>	<i>End Date</i>	<i>Expertise</i>
Universiti Putra Malaysia	Senior Lecturer	Nov/2017	Current	Academic & Researcher
Universiti Teknologi Malaysia	PhD Candidate	Feb/2014	Oct/2016	Researcher

F. PROFESSIONAL MEMBERSHIP			
<i>Institution / Society / Association</i>	<i>Role</i>	<i>Tarikh lantikan / Start Date</i>	<i>Tarikh tamat / Date Ended</i>
Malaysia Assoc Solid State (MASS)	Member	2018	Current
Institut Fizik Malaysia (IFM)	Member	2017	Current
American Association of Physicists in Medicine (AAPM)	International affiliate member	2017	Current
International Society of Radiation Physics (ISRP)	Member	2015	Current
Institute of Electrical and Electronics Engineers (IEEE)	Member	2015	Current
Malaysia Association of Medical Physicist (MAMP)	Member	2019	Current

Persatuan Fizik Perubatan Kementerian Kesihatan Malaysia (PERFEKS)	Member	2010	Current
World Institute of Nuclear (WINS)	Member / Expert	2019	Current
Malaysia Society of Radiographers (MSR)	Exco (Editorial Board)	2022	Current

G. Pengajaran (Teaching)			
<i>Course</i>	<i>Semester</i>	<i>Number of students</i>	<i>Teaching assessments (5/5)</i>
PHY4502: Radiation physics and radiobiology	1-2022/2023	45	4.75
FSA4002: Innovation and technology management for scientist	1-2022/2023	75	4.64
PHY5503: Renewable Energy Physics (MSc)	2-2022/2023	5	5
PHY4504: Nuclear Physics	2-2022/2023	21	4.7
FSA4002: Innovation and technology management for scientist	1-2022/2023	46	4.86
PHY4502: Radiation physics and radiobiology	1-2022/2023	48	4.78
PHY4504: Nuclear Physics	2-2021/2022	19	4.78
PHY3001: Mechanics	2-2021/2022	14	4.6
FSA4002: Innovation and technology management for scientist	1-2021/2022	50	4.57
PHY4502: Radiation physics and radiobiology	1-2021/2022	43	4.73
PHY4504: Nuclear Physics	2-2020/2021	20	4.84
PHY3104: Physics part II	2-2020/2021	34	4.71
FSA4002: Innovation and technology management for scientist	1-2020/2021	42	4.87
PHY3104: Physics part II	1-2020/2021	21	4.83
PHY4504: Nuclear Physics	2-2019/2020	36	4.71
PHY3304: Principle of system measurement	2-2019/2020	29	4.66
PHY4504: Nuclear Physics	1-2019/2020	10	4.74
FSA4002: Innovation and technology management for scientist	1-2019/2020	49	4.60
PHY4504: Nuclear Physics	2-2018/2019	29	4.43
PHY3104: FIZIK II	2-2018/2019	37	4.80
PHY4995: Advanced laboratory	1-2018/2019	13	NA
PHY4502: Radiation physics and radiobiology	1-2018/2019	31	4.57
PHY4504: Nuclear Physics	2-2017/2018	13	4.84
PHY4502: Radiation physics and radiobiology	2-2017/2018	37	4.87

H. Penyeliaan (Supervision of Graduate & Undergraduate Students)				
<i>Category of Graduate Student (University)</i>	<i>Role</i>	<i>Name of Student</i>	<i>Year Expected Graduated</i>	<i>Status</i>
PhD (UPM)	Main	Norasikin Ismail	2026	On-going
PhD (UPM)	Main	Husain Murat	2025	On going
PhD (UPM)	Main	Esnu Khalidi	2024	On-going
PhD (UPM)	Main	Faikah Awang @ Husin	2026	On-going
PhD (UPM)	Main	Maheran Che Ha	2026	On-going
PhD (UPM)	Main	Sulayman Kabeer	2025	On-going
PhD (UPM)	Main	Lokman Hakim Muhammad	2025	On-going
PhD (UPM)	Main	Lukiman Bishir	2026	On-going
PhD (UPM)	Main	Asmawi Mohammad	2024	On-going
PhD (UPM)	Main	Nurin Syazwina Mohd Haniff	2021	Graduated
PhD (UPM)	Main	Izdihar Kamal	2022	Graduated
PhD (UPM)	Main	Hanif Haspi Harun	2021	Graduated
PhD (UPM)	Main	Zunaide Kayun @ Farni	2024	Graduated
PhD (UPM)	Main	Osama Bagi Aljewaw	2022	Graduated
PhD (UPM)	Main	Nor Azura Muhammad	2021	Graduated
PhD (UPM)	Main	Zarina Ramli	2024	Graduated
MSc (UPM)	Main	Siti Fairuz Mat Radzi	2021	Graduated
MSc (UPM)	Main	Nur Aimi Adibah Yusoff	2022	Graduated
MSc (UPM)	Main	Amirul Fakhruddin Jamaludin	2022	Graduated
MSc (UPM)	Main	Bashiru Umar	2025	On-going
Postgrad Co-SV				
PhD (UPM)	Member	Tity Nazleen	2024	On-going
PhD (UPM)	Member	Husam Mohamed	2024	On-going
PhD (UPM)	Member	Caceja Elyca Anak Bundak	2025	On-going
PhD (UPM)	Member	Sani Aliyu	2026	On-going
MSc (UPM)	Member	Muhammad Fakhru Naim Jaafar	2025	On-going
PhD (UKM)	Member	Mardhiyati Mohd Yunus	2023	Graduated
PhD (UPM)	Member	Mohamad Aminudin Said	2024	Graduated
PhD (UiTM)	Member	Nur Fatimah Ronny Sham	2024	Graduated
FYP				
BSc	Chair	Lokman Hakim Muhammad	2022	On-going
BSc	Chair	Nur Izham	2022	On-going
BSc	Chair	Mohd Nuwair	2022	On-going
BSc	Chair	Aslam Faiz	2021	Graduated
BSc	Chair	Natasya Aresli	2021	Graduated
BSc	Chair	Nur Syafina Rosli	2021	Graduated

BSc	Chair	Amirul Fakhruddin	2020	Graduated
BSc	Chair	Nurliana Jasni	2020	Graduated
BSc	Chair	Nursyuhaida Syazlina Anas	2020	Graduated
BSc	Chair	Mohd Hakimi Nazeri	2020	Graduated
BSc	Chair	Salasiah Shamsuri*	2019	Graduated
BSc	Chair	Nur Aimi Adibah Yusoff	2019	Graduated
BSc	Chair	Nurin Syazwina	2019	Graduated
BSc	Chair	Fatimah Yusoff	2019	Graduated
BSc	Chair	Atiqa Syafiqah	2019	Graduated

** Awarded Best Thesis/Project FYP=Final Year Project

I. SENARAI PENERBITAN (Sila masukan nama pengarang, tajuk, nama jurnal, jilid, muka surat dan tahun diterbitkan)

(List of publications – author (s), title, journal, volume, page and year published)

Journal	
	1. Ihsani, R.N., Alomari, A.H., Gareso, P.L., Heryanto, H., Ardiansyah, A., Karim, M.K.A. and Tahir, D., 2025. Composite cellulose/bismuth/PVA nanocrystal for high-performance X-ray radiation shielding. <i>Radiation Physics and Chemistry</i> , 226, p.112189.
	2. Noor, K.A.M., Norsuddin, N.M., Karim, M.K.A., Isa, I.N.C. and Ulaganathan, V., 2024. Evaluating Factors Affecting Mean Glandular Dose in Mammography: Insights from a Retrospective Study in Dubai. <i>Diagnostics</i> , 14(22), p.2568.
	3. Yap, S.H., Kechik, M.M.A., Shariff, K.K.M., Baqiah, H., Chen, S.K., Lim, K.P., Shabdin, M.K., Zaid, M.H.M., Yaakob, Y., Karim, M.K.A. and Humaidi, S., 2024. Fluctuation induces conductivity and microstructural studies in Y-123: Effect of CaO inclusion. <i>Journal of Alloys and Compounds</i> , 1005, p.175955.
	4. Mohamad Ariffin, M.A., Abdul Karim, M.K., Abd Rahman, M.A., Mohd Zaid, M.H. and Harun, H.H., 2024. Diagnostic Reference Level of Radiation Dose and Image Quality of Adult CT Abdominal Examination Based on Body-mass Index (BMI) in a Tertiary Hospital in Malaysia. <i>Malaysian Journal of Medicine & Health Sciences</i> , 20.
	5. Halim, E., Kechik, M.M.A., Ibahim, M.J., Harun, H.H., Shaffiq, S.M., Yusof, A.A. and Karim, M.K.A., 2024. Task-based assessment for radiation dose optimization in CT abdominal examinations: A phantom study. <i>Radiation Physics and Chemistry</i> , 223, p.111966.
	6. Haniff, N. S. M., Ng, K. H., Kamal, I., Zain, N. M., & Karim, M. K. A. (2024). Systematic review and meta-analysis on the classification metrics of machine learning algorithm based radiomics in hepatocellular carcinoma diagnosis. <i>Heliyon</i> .
	7. Yap, S.H., Kechik, M.M.A., Khoerunnisa, F., Baqiah, H., Chen, S.K., Lim, K.P., Shabdin, M.K., Zaid, M.H.M., Yaakob, Y., Karim, M.K.A. and Humaidi, S., 2024. Microstructural and excess conductivity properties of Y-123: effect of organic polymer chitosan inclusion. <i>Journal of Materials Science: Materials in Electronics</i> , 35(21), p.1452.
	8. Noor, K.A.M., Norsuddin, N.M., Isa, I.C. and Karim, M.K.A. , 2024. Breast imaging in focus: A bibliometric overview of visual quality, modality innovations, and diagnostic performance. <i>Radiography</i> , 30(4), pp.1041-1052.
	9. Kamarudin, A.N., Miryala, M., Kechik, M.M.A., Chen, S.K., Lim, K.P., Karim, M.K.A. , Shabdin, M.K. and Shaari, A.H., 2024. Optimization of a heating pattern for single grain (Y, Er) Ba ₂ Cu ₃ O _{7-x} by infiltration growth process. <i>Journal of Alloys and Compounds</i> , 984, p.173912.
	10. Muhamad, L.H., Karim, M.K.A. , Yusof, K.A. and Basri, N.A., 2024, May. Lagrangian and Eulerian approach to predict the movement of radionuclides in selected potential sites in Malaysia during the monsoon period. In <i>IOP Conference Series: Materials Science and Engineering</i> (Vol. 1308, No. 1, p. 012006). IOP Publishing. CA
	11. Nasrudin, A.A., Shabdin, M.K., Kechik, M.M.A., Kien, C.S., Pah, L.K., Shaari, A.H., Karim, M.K.A. , Nazmi, N. and Miryala, M., 2024. Physical, magnetic, morphological, and optical properties of isotropic magnetorheological elastomers with cobalt as fillers for assistive sensor devices applications. <i>Journal of Materials Science: Materials in Electronics</i> , 35(14), p.948.
	12. Sah, N.A.M.I.A., Kechik, M.M.A., Kien, C.S., Pah, L.K., Shaari, A.H., Shabdin, M.K., Karim, M.K.A. , Miryala, M., Baqiah, H., Shariff, K.K.M. and Hong, Y.S., 2024. Comparative studies of pure

- YBa₂Cu₃O_{7-δ} prepared by modified thermal decomposition method against thermal treatment method. *Applied Physics A*, 130(5), p.340.
13. Ardiansyah, A., Armynah, B., Heryanto, H., Sukaryo, S.G., **Karim, M.K.A.** and Tahir, D., 2024. X-ray Radiation Shielding: Enhanced Performance with BaCO₃ Nanocrystal-Infused Composite Polyester/PVA/BaCO₃ Exhibiting Medicine Capsule-Like Structure. *Materials Chemistry and Physics*, p.129366.
 14. Jamaludin, A.F., Kayun, Z., Baki, S.O., Ibahim, M.J. and **Karim, M.K.A.**, 2024. Nuclear Security Culture Assessment of Medical Facilities in Malaysia. *Central Asian Journal of Medical and Natural Science*, 5(2), pp.120-133.
 15. Murat, H., MM, A.K., Chew, M.T., Kamal, I. and **MK, A.K.**, 2024. Bibliometric Review of Optimization and Image Processing of Positron Emission Tomography (PET) Imaging System between 1981-2022. *Current medical imaging*.
 16. Sham, N.F.R., Hasbullah, H.H., Hasani, N.A.H., Hasan, N., Othman, S., Osman, N.J., **Karim, M.K.A.**, Fuad, S.B.S.A. and Ibahim, M.J., 2024. Different concentrations of nivolumab reduce PD-1 expression but not tumour growth in an EMT6 mouse model. *Biomedical Research and Therapy*, 11(2), pp.6191-6197.
 17. Sani, Y., Ismail, I., Yaakob, Y., **Karim, M.K.A.** and Mohammed, J., 2024. Structural, thermal morphological, and magnetic properties of Ni_{1-x}La_xFe_{2-x}Cs_xO₄ (x= 0.1, 0.2) spinel ferrite prepared via coprecipitation method. *Nano-Structures & Nano-Objects*, 37, p.101093.
 18. Ramli, Z., Farizan, A., Tamchek, N., Haron, Z. and **Karim, M.K.A.**, 2024. Impact of Image Enhancement on the Radiomics Stability of Diffusion-Weighted MRI Images of Cervical Cancer. *Cureus*, 16(1).
 19. Rani, Mohd Saiful Asmal, Ahmad Salihin Samsudin, Mohd Nor Faiz Norrrahim, N. M. Nurazzi, **Muhammad Khalis Abdul Karim**, Mohd Hafiz Mohd Zaid, Muhammad Kashfi Shabdin, Mohd Mustafa Awang Kechik, and Khalina Abdan. "Development and characterization of crab-based chitosan filler-reinforced polymer composites." In *Polymer Composites Derived from Animal Sources*, pp. 171-187. Woodhead Publishing, 2024. (Chapter in Book)
 20. Abdulwahid Noor, K., Mohd Norsuddin, N., Abdul Karim, M. K., Che Isa, I. N., & Alshamsi, W. (2023). Estimating Local Diagnostic Reference Levels for Mammography in Dubai. *Diagnostics*, 14(1), 8.
 21. Jamaludin, A. F., **Karim, M. K. A.**, Kechik, M. M. A., Shah, N. M., Harun, M. H., & Kamal, I. (2023, November). Simulation of Hypothetical Radiological Accident at Potential Nuclear Power Plant Sites in Malaysia. In *Journal of Physics: Conference Series* (Vol. 2623, No. 1, p. 012009). IOP Publishing.
 22. Murat, H., Karim, M.K.A., Kechik, M.M.A., Amer, M.F., Razak, H.R.A., Kamal, I. and Chew, M.T., 2023, November. Internal dose assessment of lymphoma 18F-FDG Positron Emission Tomography (PET) scan. In *Journal of Physics: Conference Series* (Vol. 2623, No. 1, p. 012003). IOP Publishing.
 23. Sani, Y., Ismail, I., Yaakob, Y., **Karim, M. K. A.**, Mohammed, J., & Alhaji, B. M. (2023). Ultra-wide bandwidth electromagnetic wave and enhanced microwave absorption of Cu_{0.5}Ni_{0.5}Fe_{1.9}Mn_{0.1}O₄@CaTiO₃@MWCNTs nanocomposite in X-band frequency. *Diamond and Related Materials*, 139, 110325.
 24. Adibah Yusof, N.A., **Abdul Karim, M.K.**, Asikin, N.M., Paiman, S., Awang Kechik, M.M., Abdul Rahman, M.A. and Noor, N.M., 2023. CT Reconstruction Algorithm and Low Contrast Detectability of Phantom Study: A Systematic Review and Meta-Analysis. *Current medical imaging*, 19(10), pp.1105-1113.
 25. Aljewaw, O.B., **Karim, M.K.A.**, Effendy, N., Kamari, H.M., Zaid, M.H.M., Noor, N.M., Salim, A.A., Isa, N.M., Kadir, A.B.A., Chew, M.T. and Abokridiga, A.I., 2023. Physical, optical and thermoluminescence properties of lithium aluminum borate glass co-doped with Dy₂O₃. *Radiation Physics and Chemistry*, 209, p.111004.
 26. Abdullah, S.N., Kechik, M.M.A., Kamarudin, A.N., Talib, Z.A., Baqiah, H., Kien, C.S., Pah, L.K., **Abdul Karim, M.K.**, Shabdin, M.K., Shaari, A.H. and Hashim, A., 2023. Microstructure and superconducting properties of Bi-2223 synthesized via co-precipitation method: Effects of graphene nanoparticle addition. *Nanomaterials*, 13(15), p.2197.
 27. Barood, F., Kechik, M.M.A., Tee, T.S., Kien, C.S., Pah, L.K., Hong, K.J., Shaari, A.H., Baqiah, H., **Karim, M.K.A.**, Shabdin, M.K. and Mohd Shariff, K.K., 2023. Orthorhombic YBa₂Cu₃O_{7-δ} Superconductor with TiO₂ Nanoparticle Addition: Crystal Structure, Electric Resistivity, and AC Susceptibility. *Coatings*, 13(6), p.1093.
 28. Sham, N. F. R., Hasani, N. A. H., Idorus, M. Y., **Karim, M. K. A.**, Fuad, S. B. S. A., Hasbullah, H. H., & Ibahim, M. J. (2023). Optimization of CTLA-4 and PD-1 proteins in EMT6 Mouse Mammary Cancer Cells by Western Blot. *Malaysian Journal of Fundamental and Applied Sciences*, 19(2), 194-201.
 29. Shamshurim, S., **Karim, M.K.A.**, Baki, S.O., Kechik, M.M.A., Radzi, S.F.M., Woo, Y.M., Mhareb, M.A. and Omar, R.S., 2023. Radioactivity and Hazard Risk Analysis of Soil Samples Taken from Former Mining Area in Klang Valley. *Journal of Advanced Research in Applied Sciences and Engineering*

- Technology*, 30(2), pp.29-40.
30. Hasan, N., Hasani, N. A. H., Omar, E., Sham, F. R., Fuad, S. B. S. A., **Karim, M. K. A.**, & Ibahim, M. J. (2023). A single targeted gamma-ray irradiation induced an acute modulation of immune cells and related cytokines in EMT6 mouse-bearing tumour model. *Cancer Biomarkers*, 38(1), 61-75.
 31. S.N.F. Zalamin, M.H. M Zaid, K.A. Matori, **M.K.A. Karim**, Y. Yaakob, W.M. Cheong, Z.W. Loh, M.I. Sayyed, Role of Sm³⁺ ions as network-modifying on elastic, mechanical, and radiation shielding properties of MgO–B₂O₃–TeO₂ glasses, *Progress in Nuclear Energy*, Volume 161, 2023,
 32. Muhamad, L. H., **MK A. Karim**, M. T. Chew, M. M. A. Kechik, N. M. Shah, M. J. Ibahim, and I. M. Saeed. "Atmospheric dispersion and dose assessment of ¹³⁷Cs and ¹³¹I from hypothetical incidents of nuclear power plant in Southeast Asia." *Radiation Physics and Chemistry* 208 (2023): 110941.
 33. Aljewaw, O. B., **M. K. A. Karim**, N. Effendy, H. M. Kamari, M. H. M. Zaid, N. M. Noor, A. A. Salim et al. "Physical, optical and thermoluminescence properties of lithium aluminum borate glass co-doped with Dy₂O₃." *Radiation Physics and Chemistry* (2023): 111004.
 34. Tan, C. S., M. M. Awang Kechik, N. A. Che Dzulkipli, S. I. Sukor, A. N. Kamarudin, S. H. Yap, H. Baqiah et al. "Effect of concentration of potassium added in Y₁Ba₂Cu₃O_{7-δ} superconductor by using the thermal treatment method." In *AIP Conference Proceedings*, vol. 2619, no. 1. AIP Publishing, 2023.
 35. Yap, S. H., M. M. Kechik, S. K. Chen, A. N. Kamarudin, H. Baqiah, K. P. Lim, **M. K. A. Karim**, S. A. Halim, A. Doyan, and K. K. Shariff. "Comparative study on superconducting properties and surface morphology analysis for Y_{0.85}K_{0.15}Ba₂Cu₃O_{7-δ} and Y_{0.85}Ca_{0.15}Ba₂Cu₃O_{7-δ} synthesized via thermal treatment method." In *AIP Conference Proceedings*, vol. 2619, no. 1. AIP Publishing, 2023.
 36. Yunus, M. M., Sin, N. H., Sabarudin, A., **Karim, M. K. A.**, Kechik, M. M. A., Razali, R. A., & Shamsul, M. S. M. (2023, April). Radiomics study of lung tumor volume segmentation technique in contrast-enhanced Computed Tomography (CT) thorax images: A comparative study. In *AIP Conference Proceedings* (Vol. 2619, No. 1). AIP Publishing.
 37. Zalamin, S. N. F., M. H. M. Zaid, K. A. Matori, **M. K. A. Karim**, N. N. Yusof, S. M. Iskandar, R. Hisam, and M. N. Azlan. "Role of Ag nanoparticles embedded on optical, photoluminescence and elastic properties of samarium magnesium borotellurite glass system." *Optical Materials* 138 (2023): 113653.
 38. Sham, N. F. R., Hasani, N. A. H., Hasan, N., **Karim, M. K. A.**, Fuad, S. B. S. A., Hasbullah, H. H., & Ibahim, M. J. (2023). Acquired radioresistance in EMT6 mouse mammary carcinoma cell line is mediated by CTLA-4 and PD-1 through JAK/STAT/PI3K pathway. *Scientific Reports*, 13(1), 3108.
 39. Norsuddin, N.M., Sin, J.G.M., Ravintaran, R., Arasaratnam, S. and **Karim, M.K.A.**, 2023. Impact of age and breast thickness on mean glandular dose of standard digital mammography and digital breast tomosynthesis. *Applied Radiation and Isotopes*, 192, p.110525.
 40. **Karim, M.K.A.**, 2022. Influence of Optimization on Psychophysical Metrics of CT Brain Examinations. *Physica Medica: European Journal of Medical Physics*, 104, pp.S132-S133.
 41. Ramli, Z., **Karim, M.K.A.**, Effendy, N., Abd Rahman, M.A., Kechik, M.M.A., Ibahim, M.J. and Haniff, N.S.M., 2022. Stability and Reproducibility of Radiomic Features Based on Various Segmentation Techniques on Cervical Cancer DWI-MRI. *Diagnostics*, 12(12), p.3125.
 42. Dzul-Kifli, N.A.C., Kechik, M.M.A., Baqiah, H., Shaari, A.H., Lim, K.P., Chen, S.K., Sukor, S.I.A., Shabdin, M.K., **Karim, M.K.A.**, Shariff, K.K.M. and Miryala, M., 2022. Superconducting Properties of YBa₂Cu₃O_{7-δ} with a Multiferroic Addition Synthesized by a Capping Agent-Aided Thermal Treatment Method. *Nanomaterials*, 12(22), p.3958.
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8. **Presenter** (Oral) at 2nd International Forum on Advances in Radiation Physics held at Sunway University, Kuala Lumpur, Malaysia, 2019
9. As **participant** in International Day of Medical Physics 2019 at Dataran Siti Khadijah, UMMC, Malaysia, 2019
10. As **participant** in "Top Drawer Proposal" Workshop 2019 at Fakulti Sains, Universiti Putra Malaysia, Malaysia
11. As **invited expert** at SIRT (Yttrium-90 Radioembolization Workshop), Magdeburg, Germany, 2019
12. As **participant** in 17th SEACOMP & 3rd PIT-FMB at Bintang Bali Resort, Bali, Indonesia, 2019
13. **Presenter** titled 'Practices and Regulation for Effectiveness on Nuclear Security Control of Radioactive Sources at Medical Facilities in Malaysia'. IAEA International Conference on the Security of Radioactive Material, 3 – 7 Dec 2018, Vienna, Austria
14. Nor Syaza Zaini, Zanariah Mohd, **Muhammad Khalis Abdul Karim**, 'Magnetic Susceptibility Artefact Induced by Personal Care Product with Gold Nanoparticles on Brain Magnetic Resonance Images'. 18th Asia-Oceania Congress of Medical Physics (AOCMP) and 16th South-East Asia Congress of Medical Physics (SEACOMP), 12 – 14 Nov 2018, Bangsar South City, Kuala Lumpur, Malaysia
15. Yahaya Musa, Suhairul Hashim, **Muhammad Khalis Abdul Karim**, 'Direct and indirect entrance surface dose measurement in X-ray diagnostics using nanoDots OSL dosimeter'. 18th Asia-Oceania Congress of Medical Physics (AOCMP) and 16th South- East Asia Congress of Medical Physics (SEACOMP), 12 – 14 Nov 2018, Bangsar South City, Kuala Lumpur, Malaysia
16. **Muhammad Khalis Abdul Karim**, Noraini Abdul Rahim, Siti Norsyafiqah Mohd Mustafa, Johari Ibahim, Akmal Sabarudin, 'Assessment of the Effective Dose from Lung Cancer Screening Pilot Project in Institut Kanser Negara: A Preliminary findings'. 18th Asia-Oceania Congress of Medical Physics (AOCMP) and 16th South-East Asia Congress of Medical Physics (SEACOMP), 12 – 14 Nov 2018, Bangsar South City, Kuala Lumpur, Malaysia
17. **Muhammad Khalis Abdul Karim**, Husain Murat, Hanif Haspi, Zunaide Kayun, 'A Comparison of Dose Calculation Algorithms Model in 3-Dimensional Conformal Radiotherapy (3D-CRT) Technique'. 18th Asia-Oceania Congress of Medical Physics (AOCMP) and 16th South-East Asia Congress of Medical Physics (SEACOMP), 12 – 14 Nov 2018, Bangsar South City, Kuala Lumpur, Malaysia
18. **Muhammad Khalis Abdul Karim**, Husain Murat, Hanif Haspi, Zunaide Kayun, 'A Comparison of Dose

- Calculation Algorithms Model in 3-Dimensional Conformal Radiotherapy (3D-CRT) Technique'. 18th Asia-Oceania Congress of Medical Physics (AOCMP) and 16th South-East Asia Congress of Medical Physics (SEACOMP), 12 – 14 Nov 2018, Bangsar South City, Kuala Lumpur, Malaysia
19. **M.K.A Karim**, Radiation Risk from Diagnostic Imaging: The Impact of Patient Habitus, Monte Carlo Simulation and Mathematical Model. 4th ASOMH Scientific Conference (ASiC IV) 22 – 23 May 2017, Vivatel Hotel, Kuala Lumpur
 20. **M.K.A. Karim**, N.A.Rahim, N. A. Ngah, Z.Ramli and S.N.M. Mustafa. Evaluation of patient effective dose from National Cancer Institute (NCI), Malaysia Early Lung Cancer Screening pilot project: Preliminary findings. Radiology Asia 2017. 19 – 20 May 2017 MAX Atria @ Singapore EXPO, Singapore
 21. **M.K.A. Karim**, N.A. Bahruddin, N.A. Rahim, Z. Ismail, S.Hashim, K.A. Bakar. The Influence Of Patient Size On Size-Specific Dose Estimates (SSDE) of CT Abdomen- Pelvis. Radiology Asia 2017. 19 – 20 May 2017 MAX Atria @ Singapore EXPO, Singapore
 22. **M.K.A Karim**, N.A Rahim, S.N.M Mustafa, N.A Ngah and Z.Ramli. Strategies for Optimizing Radiation Dose of Lung Cancer Screening Program by Using Low- Dose CT Scan (LDCT) Protocols and Dual-Energy X-Ray (DEX) Imaging Techniques. 2017 Sabah MOH Science Conventions, 20 – 22 Mac 2017, Kompleks Pentadbiran Kerajaan Persekutuan, Kota Kinabalu, Sabah.
 23. N. Salehhon, S. Hashim, **M.K.A Karim**, W.C Ang, Y. Musa and N. A Bahruddin. 128 slice computed tomography dose profile measurement using thermoluminescent dosimeter. 10th International Seminar on Medical Physics, 26 – 28 August 2016, Bayview Hotel Batu Ferringhi, Penang, Malaysia.
 24. Y.Musa, S. Hashim, **M.K.A Karim**, K.A Bakar, W.C Ang and N. Salehhon. Response of optically stimulated luminescence dosimeters subjected to X-rays in diagnostic energy range. 10th International Seminar on Medical Physics, 26 – 28 August 2016, Bayview Hotel Batu Ferringhi, Penang, Malaysia.
 25. W.C.Ang, S Hashim, **M.K.A Karim**, N.A Bahruddin, N. Salehhon and Y.Musa.Adaptive iterative dose reduction (AIDR) 3D in low dose CT abdomen-pelvis: Effects on image quality and radiation exposure. 10th International Seminar on Medical Physics, 26 – 28 August 2016, Bayview Hotel Batu Ferringhi, Penang, Malaysia.
 26. Akmal Sabarudin, **Muhammad Khalis Abdul Karim***, Nurmalina Razak, Syahrani Unir, Bistaman Khalid, Suhairul Hashim. Radiation Dose Measurements in CT Angiography Examinations with Adult Anthropomorphic Phantom. 6th International Graduate Conference on Engineering, Science & Humanities (ICGESH) 15 – 17 August 2016, Block N24, Universiti Teknologi Malaysia, Johor. ISBN 978-967-0194-67-7
 27. Nur Ashiqin Bahruddin, **Muhammad Khalis Abdul Karim**, Suhairul Hashim, Akmal Sabarudin, Khatijah Abu Bakar. Radiation dose measurement among radiology staffs during Fluoroscopy guided procedures. 4th International Science Postgraduate Conference 2016, 22 - 24 February 2016, Centre for Sustainable Nano Materials (CSNANO) Ibnu Sina Institue, Universiti Teknologi Malaysia, Johor. ISBN 978- 967-0194- 54-7.
 28. Nasuha Salehhon, Suhairul Hashim, **Muhammad Khalis Abdul Karim**. Entrance Surface Dose and Cancer risk assessment in chest X-ray examination. 4th International Science Postgraduate Conference 2016, 22 - 24 February 2016, Centre for Sustainable Nano Materials (CSNANO) Ibnu Sina Institue, Universiti Teknologi Malaysia, Johor. ISBN 978- 967-0194-54-7.
 29. Ang Wee Chin, **Muhammad Khalis Abdul Karim**, Suhairul Hashim. Chest X-ray dose assessment and comparison analysis with different Diagnostic Reference Levels (DRLs). 4th International Science Postgraduate Conference 2016, 22 - 24 February 2016, Centre for Sustainable Nano Materials (CSNANO) Ibnu Sina Institue, Universiti Teknologi Malaysia, Johor. ISBN 978-967-0194-54-7.
 30. Salmiati Yunus, Abdull Rahim Mohd Yusoff, Zulkifli Yusop, Azmi Aris, Mohd Razman Salim, Shamila Azman, Davin Uy, Abdul Hamid Mar Iman, Syaiful Akhmal Saadon, **Muhammad Khalis Abdul Karim**. Assessment of Awareness among People in Cambodian Regarding Arsenic in Water and the Strategy for Behaviour Change. 4th International Science Postgraduate Conference 2016, 22 - 24 February 2016, Centre for Sustainable Nano Materials (CSNANO) Ibnu Sina Institue, Universiti Teknologi Malaysia, Johor. ISBN 978-967-0194-54-7.
 31. **M.K.A.Karim**, S.Hashim, and K.A.Bakar. Establishment of Multi-slice Computed Tomography (MSCT) reference level in Johor, Malaysia. 13th Southeast Asian Congress of Medical Physics, 10 - 12

	<p>December 2015, Universitas Islam Sunan Kalijaga, Yogyakarta (Indonesia).</p> <p>32. M.K.A.Karim, S.Hashim, D.A. Bradley, W.C Ang, N.A Bahrudin and N. Salehoh. Assessment of knowledge and awareness among Radiology Personnel regarding current CT technology and Radiation Doses. 13th Southeast Asian Congress of Medical Physics, 10 - 12 December 2015, Universitas Islam Sunan Kalijaga, Yogyakarta (Indonesia).</p> <p>33. N.A Bahrudin, M.K.A.Karim, S.Hashim, D.A. Bradley, K.A Bakar and A. Sabarudin. Radiation dose to the physician Eye Lens during Interventional Radiology. 13th Southeast Asian Congress of Medical Physics, 10 - 12 December 2015, Universitas Islam Sunan Kalijaga, Yogyakarta (Indonesia).</p> <p>34. M.K.A Karim, S.Hashim, K.A.Bakar, D.A. Bradley, W.C Ang and N.A Bahrudin. Radiation cancer risk In CT Urography examination. 13th International Symposium on Radiation Physics, 7 - 11 September 2015, Beijing Convention Centre, Beijing (China). ISBN 978-84-942137-5-5.</p> <p>35. International Convention on Medical Physics, 23 – 25 November 2013, Hotel Primiera, Kuala Lumpur</p> <p>36. Persidangan Fizik Perubatan Kementerian Kesihatan Malaysia, 16 -17 September 2013, Permaisuri MITC Hotel, Melaka</p> <p>37. M.K.A Karim, H. Wagiran, S.R. Shahudin and N.F Othaman. Assessment of Heavy Metal and Selected Mineral Content from Organically and Conventionally grown Brassicas. 9th Johor Scientific Meeting, 23 – 25 September 2013, KSL Hotel & Resort, Johor</p>
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J. PROJEK PENYELIDIKAN (Research Project)					
<i>Project No.</i>	<i>Project Title</i>	<i>Role</i>	<i>Year</i>	<i>Amount (RM)</i>	<i>Source of fund</i>
GPB/2021/9704400	Radiomic Features of Hepatocellular Carcinoma via stable 3-D printed Anthropomorphic Phantom	Project leader	2019	154,400	UPM-GPB
GP-IPM/2019/9673800	Development of stable CT phantom for dose characterization	Project leader	2019	60,000	UPM-IPM
FRGS/1/2020/STG07/UPM/02/3	Low contrast detectability and diagnostic accuracy of Computed Tomography imaging system via Intrinsic Performance Metrics Framework	Project leader	2020	139,800	FRGS-MOHE-UPM
GP-IPS/2019/9683700	Development of Quality Phantom for computed tomography texture analysis (CTTA) of solid renal massess	Project leader	2020	19,000	UPM-IPS
Geran Putra Inisiatif / 9762000	Characterizaion of Radiomic Features based Breast Cx	Project Leader	2024	40,000	UPM-GPI
GPB/2024/	Development of Optimum T1 Mapping Acquisiti on Parameter for Cardiac Magnetic Resonance Imaging (CMR) In 3 Tesla (3T) System	Project leader	2024	100,000	UPM-GPB
Geran Fujifilm (6380229)	Enhancement and strengthening of Synapse3D for CT and MRI application	Project leader	2024	5,000 USD	UPM-Fujifilm
MyLAB	Wireless transmission for radiation monitoring portal system	Member	2020	1,094,000	MyLAB-MOHE-UTM
FRGS/1/2016/SKK08/UITM/03/2	Investigating the role of eosinophils in the progression of breast cancer in mouse model post-radiotherapy treatment	Member	2016	116,226	FRGS-MOHE-UITM
FRGS/1/2020/ICT02/UPM/02/3	Hybrid Algorithmic Game Theory and Machine Learning for Optimal Pricing Mechanism of Cash Crop Trading	Member	2020	136,100	FRGS-MOHE-UPM

FRGS/1/2019/STG02/UTM/02/3	Multi-slice Scanning Computed Tomography Diagnostic Reference Levels Initiation in Malaysia.	Member	2019	83,000	FRGS-MOHE-UTM
FRGS/1/2019/STG02/USM/02/6	Establishment of paediatric CT protocols based on individual specific size for dose optimization in Malaysian paediatric population.	Member	2019	152,800	FRGS-MOHE-USM
FRGS/1/2019/SKK08/UiTM/02/9	Investigation of the role of CD8+ and its chemokine in radio-resistant breast cancer cell to gamma-ray irradiation using the 3D culture system	Member	2019	179,800	FRGS-MOHE-UiTM
FRGS/1/2019/STG07/UPM/02/3	Enhancement on thermal and optical properties of willemite glass-ceramic incorporated dysprosium oxide nanoparticles for possible application in phosphor host technology	Member	2019	60,800	FRGS-MOHE-UPM

K. ANUGERAH DAN HADIAH (<i>Honours and Awards</i>)				
<i>Name of awards</i>	<i>Title</i>	<i>Award Authority</i>	<i>Award Type</i>	<i>Year</i>
<i>Academic Awards</i>	<p>International/ National</p> <ol style="list-style-type: none"> SEAFOMP Young Leader Award 2023, South Ast Asia Federation of Medical Physics, International Level, 2023 Gold medal in Malaysia Technology Expo 2023 titled "Computed Tomography Artificial Intelligence Deteccion for Atherosclerosis (CTAID-A) model", Kuala Lumpur, National level, 2023 Gold medal in Putra Innocreative Poster Competition, i-PICTL 2022, Universiti Putra Malaysia, National level, 2022 Sijil Perkhidmatan Cemerlang, Universiti Putra Malaysia, University level 2021 Gold medal in Putra Innocreative Poster Competition, i-PICTL 2021, Universiti Putra Malaysia, National level, 2021 Silver medal in IMIC 2021 titled "Upregulation of IL-6 Gene in Acquired Radioresistance to Gamma Irradiation", UiTM, National level, 2021. Bronze medal in iiDEX 2021 titled "Targeting Interleukin-6 Pathway As An Approach Tomovercome Acquired Radio-Resistance to Improve Cancer Treatment", UiTM, National level, 2021. Best Paper Award in International Congress of Advanced Technology and Engineering (ICOTEN), IEEE, International level, 2021 Gold medal in International Putra Innocreative Poster Competition, Universiti Putra Malaysia, National level, 2020 Gold medal in Materials Technology Challenges 2020, MASS Malaysia & Universiti Putra Malaysia, National level, 2020 Silver medal in iiDEX titled "The development of radioresistance cells, EMT6RR_MJI to gamma-ray irradiation from EMT6 mouse mammary carcinoma parental cells for understanding cancer radioresistance mechanism", UiTM, National level, 2020. Bronze medal in iiDEX titled "Breast Cancer Prediction Via Tree-Based Pipelines Optimization Tools", UiTM, National level, 2020. Bronze medal, Innovation Competition Day for innovation on 'Isolation of EMT6 Cell Resistance to Gamma-Ray Irradiation", UiTM, 2019 Silver Award in Materials Technology Challenges 2019, MASS Malaysia & Universiti Putra Malaysia, National level, 2019 Best Innocreative Educator Putra Innocreative Awards: in Immersive Learning Experience-Blended Immersive Learning Experience, University Putra Malaysia, National level, 2019 			

	<ol style="list-style-type: none"> 16. Anugerah Perkhidmatan Cemerlang, Universiti Putra Malaysia, University level 2019 17. Excellent Service Award at Universiti Putra Malaysia, Faculty level 2018 18. Chancellor Award in conjunction with 58th UTM Convocation Ceremony, University Technology Malaysia, University level 2017 19. Best Postgraduate Student Award in conjunction with 58th UTM Convocation Ceremony, Johor Bahru, Universiti Teknologi Malaysia, Uni level, 2017 20. Awarded 1st prize for the Best Poster Presentation – Science & Technology track at the 6th International Graduate Conference on Engineering, Science and Humanities (ICGESH), Johor Bahru 2014 21. Awarded 1st prize for outstanding achievement in the Three Minute Thesis (3MT) competition, Universiti Teknologi Malaysia, Johor Bahru 2016 22. Awarded 2nd Prize for Scientific Poster Presentation award in 9th Johor Scientific Meeting, Ministry of Health of Malaysia. 2013 23. Awarded Anugerah Perkhidmatan Cemerlang for year 2012, Ministry of Health Malaysia, 2012 24. Awarded Best Athlete Award for achievements in sport, UKM KL Campus 2008
<i>Grant / Another award</i>	<ol style="list-style-type: none"> 1. Awarded Travel Grant for attending IMIC, IAEA, 2022 (worth EUR3000) 2. Awarded Scientific Visit grant to Liam GBH, Magdeburg, German 2 – 13 September 2019, IAEA, 2019 (worth EUR4,480) 3. Awarded scholarship for Nuclear Security Certification, World Institute of Nuclear Security, WINS, 2019 (worth EUR350) 4. Awarded Travel Grant for attending International Conference on the Security of Radioactive Material: The Way forward for Prevention and Detection, IAEA,bAmman, Jordan, 15-19 October 2017, IAEA (worth EUR2,500)
<i>Reviewers</i>	<p style="text-align: center;">Refer Publon</p>
<i>Recognitions</i>	<ol style="list-style-type: none"> 1. Invited Speaker for Quantum Excellence workshop, 2023 2. Invited Speaker for Sinaran Consultancy workshop, 2023 3. Invited Speaker for UPM-Fahla course workshop, 2023 4. Chairman of UPM-FAHLA Fundamental part 1 courses, UPM. 2023 5. Panel Penaksir for STPM Physics Subject, Majlis Peperiksaan Malaysia 2022 6. Director for Majlis Penyerahan MOU Fujifilm and UPM, UPM, 2023 7. External Examiner for Advanced Diploma CT, Ministry of Health, 2023 8. Faculty Coordinator for Industrial Linkages, Faculty of Science, UPM 9. Editorial Board Member of Technology in Cancer Research & Treatment Journal, SAGE Publisher, 2023 10. PhD External Examiner Thair Husein, USM, 2023 11. MSc External Examiner Kanmalar Mathavan, UM, 2023 12. MSc External Examiner Mohd Aizuddin Zakaria, USM, 2023 13. PhD External Examiner, Md Abdullah Al Kafi USM, 2023 14. Facilitator for community project ALPIS, SK Lanai, Kuala Lipis, 2023 15. Committee member for IMTC and ICTC, MASS Society, UPM, 2023 16. Invited Speaker on Quality Control of Radiography and Intraoral, Ministry of Health, 2022 17. Facilitator Bengkel Penulisan Manuskrip Jurnal Fakulti Sains, 2022 18. Invited Speaker for Digital Radiography, Hospital Pulau Pinang, 2022 19. Invited Speaker for Advanced Diploma (Spetember 2022), Ministry of Health, 2022 20. Invited Speaker for “Extremities X-ray made easy”, JKN Melaka, 2022 21. Committee Member for Program Persijilan Pegawai Perlindungan Sinaran, Ministry of Health, 2022

22. **Panel Penaksir** for STPM Physics Subject, Majlis Peperiksaan Malaysia 2022
23. **Facilitator** for community program TRANSMINTIH, SMK Pelagat, Jertih Terengganu, 2022
24. **Invited Speaker** in 2nd International Conference on Science Education and Sciences (ICSSES) Lombok, 2022
25. **Invited Speaker** for Quantum Excellence workshop, 2022
26. **Judge for Oral & Poster** on 52 MSR Annual General Meeting, Malacca, 2022
27. **Invited Speaker** for Malaysia Society of Radiographers, Malacca, 2022
28. **Advisor** for UPM team in participating Pertandingan Debat Nuklear antara Universiti, UKM, 2022
29. **Invited Speaker** for 4th International Symposium on Multidisciplinary Science, Centre of Foundation Studies, UPM, 2022
30. **Invited Speaker** on Machine Learning Webinar, JKN Perak, 2021
31. **Invited Speaker** at USM AMDI on Managing Patient Dose in CT, 2021
32. **Speaker and Mentor** for Research for Ministry of Health Radiographers
33. **Plenary Speaker** at MAHSA International Conference 2021
34. **Academic Advisor** for Master of Science in Healthcare of KPJ University, 2021
35. **Invited Speaker** for 1st International Conference on Science Education and Sciences (ICSSES), Lombok Indonesia, 2021
36. **Invited Speaker** on topic "HYSPLIT as Projection Tools", WeAnsa Solutions, Everly Hotel, 2021
37. **Committee member and Reviewer** for 15th International Symposium on Radiation Physics, International Radiation Physics Society, 2021
38. **Main Committee** on Medical Radiation Exposure study for DRLs in Malaysia, Ministry of Health, 2021
39. **Judge/Jury** for Pertandingan Inovasi Putra@Serdang, 2020
40. **Invited Speaker** in the International Conference and School on Physics in Medicine and Biosystems 2020, organized by Universitas Indonesia on 6-8 November, 2020.
41. **Certified Nuclear Security Professional** by World Institute for Nuclear Security (WINS), 2020
42. **Invited Speaker** in the Digital Radiography Course, at Bangi Resort Hotel on 15 February 2020, organized by KPJUC, 2020.
43. **Project Lecturer** to International Physics Tour Outreach 3.0 (IPTO 2.0) Programme in Sakura Science Programme to NiTech, Nagoya, Japan, 12 -27 January 2020, 2020
44. **Judge/Jury** for HKL Radiology Research Day, 2020
45. **Invited Speaker** for Physics Lecture Series No.4, Jabatan Fizik, UPM, 2019
46. **Module Leader** (The Coffee is Hot) for *Lonjakan Fizik SPM 2020 (Fasa 1)*, 2019
47. **External Examiner** for Bachelor of Medical Imaging final Viva for Cohort 5, KPJUC, 2019
48. **Lecturer/advisor** of the International Physics Tour Outreach 2.0 (IPTO 2.0) Programme in Turkey (Ataturk University, Erzurum Technical University, Istanbul University & Maltepe University), 2019
49. **Committee Member** for IAEA Expert Mission: Abdominal Oncologic Imaging, Ministry of Health Malaysia, 2019
50. **Project leader/Advisor** for Program Pemantapan Skor A Fizik STPM 960 Bersama Mahasiswa UPM, 2019
51. **Examiner** STPM Semester 2019 Physics 960/2, Majlis Peperiksaan Malaysia, 2019
52. **Judge/Jury** for Poster Competition, IFARP, University Sunway, 2019
53. **Treasurer** for Materials Technology Challenges (MTC 2019) at Dewan Sri Harmoni , UPM Serdang, 2019
54. **Advisor/Lecturer** for International Physics Tour Outreach 1.0 Program at Nagoya Institute Technology, Canon Medical System Japan, 2018
55. **Judge/Jury** for 2nd Hospital Kuala Lumpur Radiology Research, Kuala Lumpur, 2018
56. **Invited Speaker** for 2nd International Conference of Pharmacy and Health Sciences, Ipoh, Perak. 2018
57. **Committee member** for Nobel Laureate Outreach Camp : Scientists for tomorrow (2018)
58. **Invited Speaker** for 7th East Coast Neuroradiology & Interventional Radiology (ESC NIR) Symposium 2018, Kuala Terengganu, 2018.

	<p>59. Invited Speaker for presenting CME on IOT in Medical Imaging at Institut Kanser Negara, 2017</p> <p>60. Invited speaker for ICAMS-2017, Gaza, Palestine (recorded presentation)</p> <p>61. Committee Member for Quality Assurance Audit for Diagnostic Radiology Improvement and Learning (QUAADRIL), Ministry of Health Malaysia, 2017</p> <p>62. Judge/Jury for 1st Hospital Kuala Lumpur Radiology Research, Kuala Lumpur</p> <p>63. Keynote Speaker in 8th Symposium on Image Processing, Image Analysis and Real-Time Imaging (IPIARTI) 2017, Asia Pacific University (APU), Kuala Lumpur</p> <p>64. Invited speaker in 'Radiation safety: Do we care enough?' course in Dewan Perdana Hospital Segamat, Ministry of Health Malaysia, 2016</p> <p>65. Good Clinical Practice researcher, Clinical Research Centre, Ministry of Health, Malaysia, 2015</p> <p>66. Certified QMS Lead Auditor of ISO 9001 by (RABQSA-AU, RABQSA-QM, RABQSA-TL) and SIRIM, 2013</p> <p>67. Invited speaker in Radiation Protection Course, Hospital Sultan Ismail Johor Bahru, Ministry of Health, Malaysia 2012</p> <p>68. Committee Member in Star Rating Implementation course by MAMPU and Ministry of Health, Malaysia, 2012</p> <p>69. Invited speaker in Dental Radiography Course, Hospital Pontian, Ministry of Health Malaysia, 2011</p> <p>70. Invited speaker in World Radiography Day in Hospital Pakar Sultanah Fatimah, Muar, Ministry of Health Malaysia, 2011</p> <p>71. Certified Train of Trainer (TOT) for Radiological Emergency Preparedness and Response, Regional Security of Radioactive Source Project recognized by Australian Nuclear Science and Technology Organisation (ANSTO) and Malaysia Atomic Energy Licensing Board (AELB), 2011</p> <p>72. Invited speaker in Seminar Pengimejan Perubatan Peringkat Negeri Johor, Ministry of Health Malaysia. 2010</p>
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L. KERJA PERUNDINGAN (<i>Consultancy Project</i>)		
<i>Project Title</i>	<i>Role</i>	<i>Year</i>
Hospital Kuala Lumpur	Research fellow	2018 - now
Ministry of Education	STPM Physics (Examiner and Coordinator)	2018 - now
Ministry of Health	Committee Member	2016 - now
International Atomic Energy Agency	Expert / Chief / Member investigator CRP	2020 – now

References

1. **Assoc Prof Mohd Mustafa Awang Kechik**
 Department of Physics
 University Putra Malaysia
mmak@upm.edu.my
2. **Mr Zunaide Kayun**
 Director
 Department of Radiation Surveillance
 Ministry of Health Malaysia
zunaide@moh.gov.my