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Senior Lecturer

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EDUCATION AND ACADEMIC QUALIFICATION

University	***Year***	***Qualification***
Universiti Putra Malaysia, Malaysia	2014	Doctor of Philosophy *(Quantum Science and Technology)*
Universiti Putra Malaysia, Malaysia	2009	Master of Science *(Applied Optics)*
Universiti Putra Malaysia, Malaysia	2003	B. Sc. (Honours) *(Major Physics)*

TEACHING EXPERIENCE

Mechanic and wave, Thermal and modern physics, Circuit theory, Material science, Sensor and transducer, Computer interfacing and control, Graphical programming LabVIEW, Computational physics, Classical mechanics, Statistical mechanics and Mathematical physics.

FIELD OF SPECIALIZATION

Quantum Science and Technology, Theoretical Physics

CURRENT RESEARCH INTEREST

Theoretical Physics
In my Ph.D research, I worked on the computation of eigenvalues for eigenfunction of Laplace-Beltrami operator on hyperbolic surfaces. These eigenfunctions are called Maass Cusp Forms (MCF) and their eigenvalues are not known analytically. The numerical computation was worked out on a cluster workstation using GridMathematica (parallel computing). Recently, we have been working on finding eigenvalues for asymmetric torus.

Complex Network
A network is a simplified representation that reduces a system to an abstract structure with its own pattern of connections between components. My research interests include modelling of network using hyperbolic tessellation, characterization of the complex network, studying network using dynamical method (random walk) and looking for analytical solution for some deterministic model.

Density Functional Theory
This field is my recent interest. Currently I'm using Quantum Espresso to study the structural and electronic properties of 2D materials due to adsorption of different materials.

RECENT PUBLICATION

Nor Syazana Shamsuddin, Hishamuddin Zainuddin and **Chan Kar Tim** "Computing Maass cusp form on general hyperbolic torus", AIP Conference Proceedings 1795, 020014 (2017); doi: 10.1063/1.4972158

Auwalu, I., Halimah, M., Zaidan, A., **Chan, K.,** & Abdullahi, U. (2017). Effect of bismuth oxide on structural and thermal diffusivity of waste rice ash zinc silicate (willemite) glass ceramics. Journal of the Australian Ceramic Society, 53(2), 985-991.

Auwalu, I., Halimah, M. K., Zaidan, A., **Chan, K.,** & Abdullahi, U. (2017). Structural and Thermal Diffusivity of Sm3+ Doped Willemite Glass Ceramics System from Waste Materials. Paper presented at the Solid State Phenomena.

Awshah, A. A. A., Kamari, H. M., **Tim, C. K**., Shah, N. M., Alazoumi, S., Aliyu, U. S., & Abd Azis, M. N. (2017). Effect of Neodymium Nanoparticles on Elastic Properties of Zinc-Tellurite Glass System. Advances in Materials Science and Engineering, 2017.

Umar, S., Halimah, M., **Chan, K**., & Latif, A. (2017). Physical, structural and optical properties of erbium doped rice husk silicate borotellurite (Er-doped RHSBT) glasses. Journal of Non-Crystalline Solids, 472, 31-38.

Umar, S., Halimah, M., **Chan, K**., & Latif, A. (2017). Polarizability, optical basicity and electric susceptibility of Er 3+ doped silicate borotellurite glasses. Journal of Non-Crystalline Solids.

Zainuddin, H., **Tim, C. K**., Shamsuddin, N. S., & Shah, N. M. (2017). Quantum Bound States on Some Hyperbolic Surfaces. Paper presented at the Journal of Physics: Conference Series

Shelawati, T., Nurisya, M., **Tim, C. K**., & Mazliana, A. (2018). Transition Energy in Strong and Weak Confinement of Type-I Spherical Core-shell Quantum Dots. *arXiv preprint arXiv:1811.06977*.

Halimah, M., Hamza, A., Muhammad, F., **Chan, K.**, Umar, S., Umaru, I., & Geidam, I. (2019). Effect of erbium nanoparticles on structural and spectroscopic properties of bio-silica borotellurite glasses containing silver oxide. *Materials Chemistry and Physics*, 121795.

Hamid, M. A. B., **Tim, C. K.**, Yaakob, Y. B., & Hazan, M. A. B. (2019). Structural, electronic and transport properties of silicene on graphene substrate. *Materials Research Express, 6*(5), 055803.

Halimah, M., Umar, S., **Chan, K**., Latif, A., Azlan, M., Abubakar, A., & Hamza, A. (2019). Study of rice husk silicate effects on the elastic, physical and structural properties of borotellurite glasses. *Materials Chemistry and Physics, 238*, 121891.

Hamza, A., Halimah, M., Muhammad, F., & **Chan, K.** (2019). Physical properties, ligand field and Judd-Ofelt intensity parameters of bio-silicate borotellurite glass system doped with erbium oxide. *Journal of Luminescence, 207*, 497-506.

Hamza, A., Halimah, M., Muhammad, F., **Chan, K.**, Usman, A., Faznny, M., . . . Tafida, R. (2019). Structural, optical and thermal properties of Er3+-Ag codoped bio-silicate borotellurite glass. *Results in Physics*, 102457

Kamal, N. N. A., **Chan, K. T.**, Shah, N. M., Zainuddin, & H. (2019). Dynamical Process On Growing Geometrical Network Based On Modular Group. *ASM Sc. J., 12*(Special Issue 1), 276-284.

Shelawati, T., Nurisya, M., Mazliana, A., & **Tim C., K.** (2019). Effects of step-potential on confinement strength of strain-induced type-I core–shell quantum dots. *Superlattices and Microstructures, 131*, 95-103.