BIOGRAPHICAL SKETCH

Yoke Khin Yap, Ph.D.
Professor of Physics
"Michigan Tech University Professor"
Director, Graduate Program in Applied Physics
Affiliated Professor of Materials Science and Engineering (MSE)
Affiliated Professor of Mechanical and Aerospace Engineering (MAE)
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A. PROFESSIONAL PREPARATION:

University of Malaya (Kuala Lumpur, Malaysia), Physics	*B.Sc. (Hon)* 1992
University of Malaya (Kuala Lumpur, Malaysia), Physics	*M.Sc.* 1994
Osaka University (Osaka, Japan), Electrical Engineering	*Ph.D.* 1999
New Energy Industrial Tech Development Org./Osaka Univ.	*Scientist* (1999-2000)
The Japan Society for the Promotion of Science/Osaka Univ.	*JSPS Fellow* (2000-2002)

B. APPOINTMENTS:

Associate Department Chair	Michigan Technological University (June 2023-May 2024)
University Professor	Michigan Technological University (Since January 2020)
Professor	Michigan Technological University (Since August 2011)
Associate Professor	Michigan Technological University (August 2006-August 2011)
Assistant Professor	Michigan Technological University (January 2002-August 2006)

C. Selected Publication:

1. A. Acharya, M. Ye, J. Kabel, S. Sharma, A. Asthana, K. Neupane, J. Uddin, D. Zhang, and Y. K. Yap, "Efficient Quantum Dot Solar Cells with Sustainable Oxide Thin Films," *ACS Appl. Energy Materials* **8**, 8110 (2025). Featured as the journal cover graphic and News coverage: Solar Cells: Back to the Basics, Forward to the Future
2. (Review) R. Dubey, M. Cowles, Z. Salimi, X. Liu, R. Oakley, N. Yapici, J. Uddin, D. Zhang, Y. K. Yap, "Boron nitride nanosheets, quantum dots, and dots: Synthesis, properties, and biomedical applications," *APL Mater.* **13**, 040601 (2025). Featured Article at APL Materials. Unsolicited highlight in *Scilight News* "Expanding the biomedical potential of boron nitride".
3. J-K. Qin, P-Y. Liao, M. Si, S. Gao, G. Qiu, J. Jian, Q. Wang, S-Q. Zhang, S. Huang, A. Charnas, Y. Wang, M. Kim, W. Wu, X. Xu, H. Wang, L. Yang, Y. K. Yap, and P. Ye, "Raman Response and Transport Properties of One-Dimensional van der Waals Tellurium Atomic Chains in Nanotubes" *Nature Electronics* **3** 141-147 (2020). News coverage from Materials Today, AAAS (EurekAlert!, EurekAlert-2, EurekAlert-3), PhysOrg. Altmetric Attention Score in the 99th percentile.
4. S. Bhandari, B. Hao, K. Waters, C. H. Lee, J-C. Idrobo, D. Zhang, R. Pandey, Y. K. Yap, "Two-Dimensional Gold Quantum Dots with Tunable Bandgaps," *ACS Nano* **13**, 4347 (2019). News from Physorg, EurekAlert!, Nanowerk, Electropages, IntelligentThings, etc.
5. (Frontier Review) C. H. Lee, B. Tiwari, D. Zhang, Y. K. Yap, "Water Purification: Oil-water Separation by Nanotechnology and Environmental Concerns," *Environ. Sci.: Nano 2017,* **4**, 514-525. Environmental Science: Nano 2017 Most Downloaded Article.
6. (Review) M. Ye, D. Winslow, D. Zhang, R. Pandey, Y. K. Yap, "Recent Advancement on the Optical Properties of Two-Dimensional Molybdenum Disulfide (MoS2) Thin Films," *Photonics* **2015**, *2*(1), 288-307.

7. C. H. Lee, S.Y. Qin, M. A. Savaikar, J. Wang, B. Hao, D. Zhang, D. Banyai, J. A. Jaszczak, K.W. Clark, J.-C. Idrobo, A.-P. Li, Y. K. Yap, "Room-Temperature Tunneling Behavior of Boron Nitride Nanotubes Functionalized with Gold Quantum Dots," *Advanced Materials* **25**, 2544 (2013). * News Coverage in *Phys Org*, the *Register*, *Science World Report*, *IEEE Spectrum,* and *numerous others*.
8. A. Pandey, A. Prasad, J. P. Moscatello, M. Engelhard, C. Wang, Y. K. Yap, "Very Stable Electron Field Emission from Strontium Titanate Coated Carbon Nanotube Matrices with Low Emission Thresholds," *ACS Nano* **7**, 117 (2013).
9. C. H. Lee, N. Johnson, J. Drelich, Y. K. Yap, "The performance of superhydrophobic and superoleophilic carbon nanotube meshes in water–oil filtration," *Carbon* **49**, 669 (2011)
10. (Review) Jiesheng Wang, Chee Huei Lee and Yoke Khin Yap, "Recent advancements in boron nitride nanotubes," *Nanoscale* **2**, 2028 (2010).
11. C. H. Lee, M. Xie, V. Kayastha, J. Wang, and Y. K. Yap, "Patterned Growth of Boron Nitride Nanotubes by Catalytic Chemical Vapor Deposition," *Chem. Mater*. **22**, 1782 (2010). News coverage from *MTU*, *Phys Org*, *Eurekalert (AAAS), Nano Today etc*.
12. A. Kumar, P. A. Lin, A. Xue, B. Y. Hao, Y. K. Yap, R. M. Sankaran, "Formation of Nanodiamonds at Near-Ambient Conditions via Microplasms Dissociation of Ethanol Vapor," *Nature Communications* 4, Article number: 2618, doi:10.1038/ncomms3618. *News Coverage in numerous media.
13. A. Pandey, A. Prasad, J. Moscatello, Y. K. Yap, "Stable Electron Field Emission from PMMA-CNT Matrices," *ACS Nano* **4**, 6760 (2010).
14. J. Wang, V. Kayastha, Y. K. Yap, et. al., "Low temperature growth of boron nitride nanotubes on substrates," Nano Letters.5, 2528 (2005). *Unsolicited News Coverage in Materials Today Vol. 9 (no 1-2), page 9, Jan-Feb 2006.
15. T. Sasaki, Y. Mori, M. Yoshimura, Y. K. Yap and T. Kamimura, "Recent development of nonlinear optical borate crystals: key materials for generation of visible and UV light," *Material Science and Engineering R* **30** (2000) 1.

D. SYNERGISTIC ACTIVITIES:

1. The creator and lead organizer of a MRS symposium series: 1) *Symposium MM: Nanotubes and Related Nanostructures* in Spring 2014; 2) *Symposium AA: Carbon Nanotubes, Graphene, and Related Nanostructures* in Fall 2011; 3) *Symposium K: Nanotubes and Related Nanostructures* in Fall 2009; and 3) *Symposium II: Nanotubes and Related Nanostructures*, in Fall 2007. More from the organizer team in 2016, 2018, 2020, 2022, 2024, etc.
2. The editor of four volumes of MRS Proceedings 1) "Nanotubes and Related Nanostructures—2014" (Vol. 1700), 2) "*Carbon Nanotubes, Graphene and Related Nanostructures*" (Vol. 1407), 3) "*Nanotubes and Related Nanostructures -2009*" (Vol. 1204), and 4) "*Nanotubes and Related Nanostructures*" (Vol. 1057).
3. The editor of a book, "*B-C-N nanotubes and related nanostructures*" (Springer 2009). Author of a series of book and encyclopedia chapters.
4. Reviewer of various funding agencies (including NSF, DOE, etc, and the 2015 DOE BES DMSE Triennial Review of the Oak Ridge National Laboratory projects) and international journals (*Science, Nature Nanotech., Nano Letters, ACS Nano, Advanced Materials, JACS, Chem. Mater., Appl. Phys. Lett.,* etc.)
5. Fellowships and Honors:

2025	Fellow, The International Association of Advanced Materials
2022	Dean's Teaching Showcase, College of Science and Arts
2020	Honored with the title of "Michigan Tech University Professor"
2018	Honored with the MTU Research Award
2015-	Honored as one of the first Osaka University *Global Alumni Fellows*
2014-2016	*Faculty Fellow* in Economy Development and Technology Commercialization, MTU Office of the Vice President for Research
2014-	*Member* of the MTU Research Advisory Council
2012-	*Member* of the MTU Graduate Faculty Council

2011	The recipient of the MTU Bhakta Rath Research Award
2010	*Task force member and sub-group leader* of MRS to provide input to the White House OSTP for the development of a revised Plan for the National Nanotechnology Initiative.
2008-2009	The first elected *Chair* of the User Group of the DOE Center for Nanophase Materials Sciences (CNMS) at Oak Ridge National Laboratory (ORNL)
2006	*US representative* to the 2006 NSF US-China Nanotechnology workshop.
2005-	*Board member* of Osaka University North America Alumni Association
2005-2007	*Charter member* of the users' executive committee of CNMS at ORNL
2005	Honored with the NSF Faculty Early Career Development *(CAREER)* Award
2000-2002	*Fellow* of the Japan Society for the Promotion of Science (JSPS)
1995-1999	*Monbusho* Scholar of the Japanese Ministry of Education, Science, Sports, and Culture.

Brief Professional Biography of Professor Yoke Khin Yap

Dr. Yoke Khin Yap is a professor of physics, Director of Applied Physics Graduate Program, a member of the Research Advisory Council (RAC), and a member of the Graduate Faculty Council (GFC) at Michigan Technological University (MTU), USA. Professor Yap earned his Ph.D. in 1999 from Osaka University, as sponsored by the Japanese government as a *Monbusho* scholar. Professor Yap was a postdoctoral fellow of the Japan Society for the Promotion of Science (JSPS) before his faculty appointment at MTU in January 2002. Professor Yap was promoted to Associate Professor with tenure in 2006 and to Professor with tenure in 2011.

Professor Yap was honored with the U.S. National Science Foundation *CAREER* Award in 2005. He was a *Charter member* of the users' executive committee of the Center for Nanophase Materials Sciences (CNMS) at Oak Ridge National Laboratory (ORNL) from 2005 to 2007. He then served as the first elected chair of the user group in 2008. In 2010, Professor Yap served as a member of the MRS task force to prepare input for the White House Office of Science and Technology Policy (OSTP) in support of a revised Strategic Plan for the National Nanotechnology Initiative (NNI). In 2011, Professor Yap received the *MTU Bhakta Rath Research Award* for his work on boron nitride nanotubes (BNNTs). Professor Yap was appointed as a *Faculty Fellow* in the Office of the Vice President for Research from 2014 to 2016, to promote funding revenue through basic research and technology commercialization. In June 2015, Dr. Yap was honored as an *Osaka University Global Alumni Fellow,* among the first honorees, joining alumni from King's College, Cambridge University, University of Pennsylvania, Columbia University, and the University of Chicago. In 2015-2018, Professor Yap was an *Advisory Board Member* for the International Conference on the Science and Application of Nanotubes and Low-Dimensional Materials, one of the most influential scientific conferences in the field of nanoscience and technology (The so-called NT conferences since 1999). Professor Yap received the *MTU Research Award* in 2018 for his leadership in nano research. In 2020, Professor Yap was honored with the title of "Michigan Tech University Professor". Dr. Yap was selected for the Dean's Teaching Showcase in February 2022. He was named a fellow of the International Association of Advanced Materials in 2025. His research group at MTU has published a series of peer-reviewed journal articles in *Nature Electronics (Impact Factor 34.5), Advanced Materials (Impact Factor 29.4)*, *Materials Science and Engineering R(Impact Factor 26.8), ACS Nano (Impact Factor 17.1), Nature Communications (Impact Factor 16.6)*, more than 20 book and encyclopedia review chapters, and a series of invited journal review articles. He has also edited a book (Springer), four Materials Research Society (MRS) proceedings for an MRS symposium series that he created in 2007, and several special issues for professional journals. Dr. Yap has also filed more than 35 patent applications under the Patent Cooperation Treaty (PCT) in the US, Europe, and Asia.