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Academic Qualifications:

B.S. 1982 Engineering Physics (High Honors), University of California, Berkeley
M.S. 1984 /Ph.D 1987, Materials Science and Mineral Engineering, University of
California, Berkeley

Previous academic positions:

Feb. 2024-Aug. 2024: Visiting Professor, Department of Materials Science and Engineering,
University of California, Berkeley.

2014-2023: Professor, Department of Physics and Department of Materials Science and
Engineering, City University of Hong Kong, Kowloon, Hong Kong

1987- 2014: **Staff Scientist** and **Principal Investigator**, Materials Sciences Division,
Lawrence Berkeley National Laboratory, Berkeley, CA; **Director**, Ion Beam Analysis
Facility, MSD, LBNL; **Leader**, Solar Energy Materials Research Group, LBNL.

Research Interests: Defects in Semiconductors, Nitride and Oxide semiconductors, Highly
Mismatched Alloys, Photovoltaic materials, Ion beam analysis and modifications of
materials.

Publications: published over 500 journal articles and 17 book chapters and invited reviews; 15
patents; over ~**26000** citations and *h*-index **79** in Google Scholar; on the Stanford's top **2%**
most highly cited scientists list.

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Selected publications in the last 10 years (2015-2024)

1. **Kin Man Yu***, M. A. Scarpulla, Chun Yuen Ho, O. D. Dubon and W. Walukiewicz,
“Overcoming the Doping Limit in GaAs by Ion Implantation and Pulsed Laser Melting,”
J. Appl. Phys. **135**, 045302 (2024).
2. Sai Liu, Yang Li, Ying Wang, Yuwei Du, **Kin Man Yu**, Hin Lap Yip, Alex K.Y. Jen,
Baoling Huang, Chi Yan Tso, “Mask-Inspired Moisture-transmitting and Durable
Thermochromic Perovskite Smart Windows,” *Nat. Comm.* **15**, 876 (2024).
3. Mohammad Kamal Hossain, Wayesh Qarony, Sujit Kumer Shil, Ying Wang, Cheuk Kai
Gary Kwok, Kingsley. O. Egbo, Yuen Hong Tsang, Johnny C. Ho and **Kin Man Yu***,
“Quaternary CsPbX₃ (X = Cl_{1-x}Br_x, Br_{1-x}I_x) Alloy Microplates synthesized by Single-
Step Chemical Vapor Deposition and their Two-Photon Absorption (TPA) properties,”
J. Mater. Chem. C **12**, 2561-2570 (2024)
4. **Kin Man Yu***, Wei Zhu, Ying Wang, Yajie Li, Chaoping Liu, Guibin Chen, and W.
Walukiewicz, “Transition metal elements as donor dopants in CdO,” *Phys. Rev. Mater*
7, 074602 (2023).
5. Mengxia Wang, Ying Wang, Yi Wu, Hao Ma, Hang Jiang, Yuanan Zhao, Yujie Peng,
Wenkai Li, Yuxin Leng, **Kin Man Yu***, Jianda Shao, “Tunable and robust mid-infrared
saturable absorber employing tungsten doping cadmium oxide,” *Adv. Funct. Mater.*,
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6. Sujit Kumer Shil, Fei Wang, Kingsley O. Egbo, Ying Wang, Cheuk Kai Gary Kwok, Sai-W. Tsang, Johnny C. Ho, and **Kin Man Yu***, “Chemical Vapor Deposition Growth and Photodetector Performance of Lead-Free All-Inorganic Crystalline Cs₃Sb₂X₉ (X= I, Br) Perovskite Thin Films,” *J. Mater. Chem C* **11**, 4603 (2023).
7. Pengfei Guo, Da Liu, Xia Shen, Qihang Lv, Yu Wu, Qian Yang, Pu Li, Yuying Hao, Johnny C. Ho, **Kin Man Yu***, “A Monolithic Dual-wavelength Laser of On-wire Axial Perovskite Heterostructures,” *Nano Energy* **92**, 106778 (2022).
8. Zhan Hua Li, Jia Xing He, Xiao Hu Lv, Ling Fei Chi, Kingsley O. Egbo, Ming-De Li, Tooru Tanaka, Qi Xin Guo, **Kin Man Yu**, and Chao Ping Liu, “Optoelectronic properties and ultrafast carrier dynamics of copper iodide thin films,” *Nat. Comm.* **13**, 6346 (2022).
9. Sai Liu, Yu Wei Du, Chi Yan Tso, Hau Him Lee, Shien-Ping Feng, **Kin Man Yu**, “Organic Hybrid Perovskite (MAPbI_{3-x}Cl_x) for Thermochromic Smart Window with Strong Optical Regulation Ability, Low Transition Temperature and Narrow Hysteresis Width” *Adv. Funct. Mater.* 2010426 (2021).
10. Sujit Kumer Shil, Fei Wang, Kingsley O. Egbo, Zhengxun Lai, Ying Wang, Yunpeng Wang, Dongxu Zhao, Sai W. Tsang, Johnny C. Ho, and **Kin Man Yu***, “Two-Step Chemical Vapor Deposition Synthesized Lead-Free All-Inorganic Cs₃Sb₂Br₉ Perovskite Microplates for Optoelectronic Applications,” *ACS Appl. Mater Inter.*, **13**, 35930-35940 (2021).
11. Kingsley O. Egbo, Ayotunde E. Adesina, Chioma V. Ezeh, Chao Ping Liu, **Kin Man Yu***, “Effects of free carriers on the optical properties of high mobility transition metal doped In₂O₃ transparent conductors,” *Phys. Rev. Mater.* **5**, 094603 (2021).
12. Ying Wang, Menglin Li, Baobing Fan, Yeung Sum Wong, Chung Yan Lo, Cheuk Kai Gary Kwok, Sujit Kumer Shil, Hin Lap Yip, Alex K.-Y. Jen, Stephen Sai-Wing Tsang, **Kin Man Yu***, “The flexibility of room-temperature-synthesized amorphous CdO-In₂O₃ alloy films and their application as transparent conductors in perovskite solar cells” *ACS Appl. Mater. Interf.* **13**, 43795–43805 (2021).
13. Mohammad Kamal Hossain, Roberto dos. Reis, Wayesh Qarony, Yuen Hong Tsang, Johnny C. Ho, and **Kin Man Yu***, “Mechanism of Non-Catalytic Chemical Vapor Deposition Growth of All-Inorganic CsPbX₃ (X=Br, Cl) Nanowires,” *J. Mater. Chem. C* **9**, 3229 (2021).
14. Chao Ping Liu, Kingsley O. Egbo, Chun Yuen Ho, Ying Wang, Cong Kang Xu, and **Kin Man Yu***, “Wide-Gap Rock-Salt Zn_{1-x}Ni_xO Alloy: a Transparent p-type Oxide,” *Phys. Rev. Appl.* **13**, 024049 (2020).
15. Kingsley Egbo, Chao Ping Liu, Chinedu E. Ekuma, and **Kin Man Yu***, “Vacancy defects induced changes in the electronic and optical properties of NiO,” *J. Appl. Phys.* **128**, 135705 (2020).
16. Mohammad Kamal Hossain, Pengfei Guo, Wayesh Qarony, Yuen Hong Tsang, Chaoping Liu, Sai Wing Tsang, Johnny C. Ho, and **Kin Man Yu***, “Controllable Optical Emission Wavelength in All-Inorganic Halide Perovskite Alloy Microplates Grown by Two-step Chemical Vapor Deposition,” *Nano Research* **13**(11), 2939 (2020).
17. Chun Yuen Ho, Chao Ping Liu, Yi-Chun Chen, Feng-Chuan Chuang, and **Kin Man Yu***, “The Effect of Growth Environment on the Phase stability of sputtered Cd_xZn_{1-x}O alloys,” *Phys. Rev. Mater.* **3**, 074605 (2019).
18. M. Ting, **K. M. Yu***, M Jaquez, I. D. Sharp, Yifan Ye, N. Segercrantz, R. Greif, S. S. Mao, Chaoping Liu, and W. Walukiewicz, “ZnO_{1-x}Te_x Highly Mismatched Alloys Beyond the Dilute Alloy Limit: Synthesis and Electronic Band Structures,” *J. Appl. Phys.* **125**, 155702 (2019).

19. Chao Ping Liu, Kingsley Egbo, Chun Yuen Ho, Juan Antonio Zapien, W. Walukiewicz, and **Kin Man Yu***, “Stoichiometry controlled bipolar conductivity in nanocrystalline $\text{Ni}_x\text{Cd}_{1-x}\text{O}_{1+\delta}$ thin films,” *Phys. Rev. Appl.* **11**, 014020 (2019).
20. Chao Ping Liu, Chun Yuen Ho, Roberto dos. Reis, Yishu Foo, Peng Fei Guo, J. A. Zapien, Wladek Walukiewicz, and **Kin Man Yu***, “Room Temperature Synthesized Highly Conducting and Transparent Amorphous CdO-Ga₂O₃ Alloys,” *ACS Appl. Mater. Interfaces* **10**, 7239-7247 (2018).
21. Pengfei Guo, M. K. Hossain, Xia Shen, Haibin Sun, Wenchao Yang, Chaoping Liu, Chun Yuen Ho, Cheuk Kai Kwok, Sai-Wing Tsang, Johnny C. Ho, Yongsong Luo, **Kin Man Yu***, “Room-temperature Red-Green-Blue Whispering-Gallery Mode Lasing and White-Light Emission from Cesium Lead Halide Perovskites (CsPbX_3 , X = Cl, Br, I) Microstructures,” *Adv. Opt. Mater.*, 1700993 (2017).
22. Chao Ping Liu, Chun Yuen Ho, Cheuk Kai Kwok, Peng Fei Guo, M. K. Hossain, J. A. Zapien, and **Kin Man Yu***, “High Mobility Transparent Amorphous CdO-In₂O₃ Alloy Films Synthesized at Room Temperature,” *Appl. Phys. Lett.*, **111**(7):072108 (2017).
23. Pengfei Guo, Jinyou Xu, Ke Gong, Xia Shen, Yang Lu, Yang Qiu, Junqi Xu, Zhijun Zou, Chunlei Wang, Hailong Yan, Yongsong Luo, Anlian Pan, Han Zhang, Johnny C. Ho, and **Kin Man Yu***, “On-nanowire Axial Heterojunction Design for High-Performance Photodetectors,” *ACS Nano* **10** (9), 8474–8481 (2016).
24. Francesca M. Toma, Jason K. Cooper, Viktoria Kunzelmann, Matthew T. McDowell, Jie Yu, David Larson, Nicholas J. Borys, Christine Abelyan, Jeffrey W. Beeman, **Kin Man Yu**, Jinhui Yang, Le Chen, Matthew R. Shaner, Joshua Spurgeon, Frances A. Houle, Kristin A. Persson, Ian D. Sharp, “Mechanistic Insights into Chemical and Photochemical Transformations of Bismuth Vanadate Photoanodes,” *Nature Comm.* **7**, 12012 (2016).
25. Chaoping Liu, Yishu Foo, M. Kamruzzaman, Chun Yuen Ho, J. A. Zapien, Wei Zhu, Y. J. Li, Wladek Walukiewicz, and **Kin Man Yu***, “Free carrier effects on optical properties of doped CdO thin films studied by spectroscopic ellipsometry,” *Phys. Rev. Appl.* **6**, 064018 (2016).
26. **Kin Man Yu***, D. M. Detert, Guibin Chen, Wei Zhu, Chaoping Liu, S. Grankowska, O. D. Dubon, Leon Hsu, and Wladek Walukiewicz, “Defects and Properties of Cadmium Oxide Based Transparent Conductors” *J. Appl. Phys.* **119**, 181501 (2016).
27. N. López, **K. M. Yu**, T. Tanaka, and W. Walukiewicz, “Multicolor Electroluminescence from Intermediate Band Solar Cell Structures,” *Adv. Energy Mater.* **6**, 1501820 (2016).
28. Joonki Suh, **Kin Man Yu**, Deyi Fu, Xinyu Liu, Fan Yang, Jin Fan, David J. Smith, Yong-Hang Zhang, Jacek K. Furdyna, Chris Dames, Wladyslaw Walukiewicz, and Junqiao Wu, “Simultaneous Enhancement of Electrical Conductivity and Thermopower of Bi₂Te₃ by Multi- Functionality of Native Defects,” *Adv. Mater.*, **27**, 3681–3686 (2015).
29. Min Ting, Roberto dos Reis, M. Jaquez, O. D. Dubon, S. S. Mao, **Kin Man Yu***, and W. Walukiewicz, “Tunability of Electronic Band Structures in ZnO-rich Highly Mismatched ZnO_{1-x}Te_x Alloys,” *Appl. Phys. Lett.* **106**, 092101 (2015).
30. C. Francis, D. Detert, G. Chen, O. Dubon, **K. M. Yu**, and W. Walukiewicz “Ni_xCd_{1-x}O: Semiconducting alloys with extreme type III band offsets” *Appl. Phys. Lett.* **106**, 022110 (2015).