

---

## Curriculum Vitae

---

**Name:** Peter Yek Nai Yuh

**List of Research:**

**Internal Grant**

1. Production and characterization of biochar via microwave pyrolysis of lignocellulosic biomass. (4/2018/06)
2. Microwave-assisted torrefaction (MAT) coupled with waste oil activation: An approach to upgrade fuel product from empty fruit bunch pellet. (3/2018/04)
3. Microwave steam activation system to convert palm kernel shell into highly activated carbon. (3/2018/03)
4. Production of Biochar from Oil Palm Waste through Vacuum Carbonizer for Mushroom Cultivation (4/2018/19)
5. Development of Self-Sustainable Pyrolysis System to Convert Biomass into Biochar. (4/2018/05)
6. Performance Analysis of Microwave Air Heater (MAH) for Agriculture Product Drying Application. (4/2018/18)
7. Production of Low Cost Bio-Adsorbent via Single-Step Microwave Steam Activation Technique for COD Removal of Landfill Leachate. (4/2018/12)

**List of Publications:**

1. **Yek, P. N. Y.**, Chen, X., Peng, W., Liew, R. K., Cheng, C. K., Sonne, C., . . . Lam, S. S. (2021). Microwave co-torrefaction of waste oil and biomass pellets for simultaneous recovery of waste and co-firing fuel. *Renewable and Sustainable Energy Reviews*, 152, 111699. doi: <https://doi.org/10.1016/j.rser.2021.111699>
2. **Yek, P. N. Y.**, Cheng, Y. W., Liew, R. K., Wan Mahari, W. A., Ong, H. C., Chen, W.-H., . . . Lam, S. S. (2021). Progress in the torrefaction technology for upgrading oil palm wastes to energy-dense biochar: A review. *Renewable and Sustainable Energy Reviews*, 151, 111645. doi: <https://doi.org/10.1016/j.rser.2021.111645>
3. **Yek, P. N. Y.**, Li, C., Peng, W., Wong, C. S., Liew, R. K., Wan Mahari, W. A., . . . Lam, S. S. (2021). Production of modified biochar to treat landfill leachate using integrated microwave pyrolytic CO<sub>2</sub> activation. *Chemical Engineering Journal*, 425, 131886. doi: <https://doi.org/10.1016/j.cej.2021.131886>
4. **Yek, P. N. Y.**, Osman, M. S., Wong, C. C., Wong, C. S., Kong, S. H., Sie, T. S., . . . Liew, R. K. (2020). Microwave wet torrefaction: A catalytic process to convert waste palm shell into porous biochar. *Materials Science for Energy Technologies*, 3, 742-747.
  - a. doi: 10.1016/j.mset.2020.08.004
5. **Yek, P. N. Y.**, Peng, W., Wong, C. C., Liew, R. K., Ho, Y. L., Wan Mahari, W. A., . . . Lam, S. S. (2020). Engineered biochar via microwave CO<sub>2</sub> and steam pyrolysis to treat carcinogenic Congo red dye. *J Hazard Mater*, 395, 122636. doi: <https://doi.org/10.1016/j.jhazmat.2020.122636>
6. Foong, S. Y., Abdul Latiff, N. S., Liew, R. K., **Yek, P. N. Y.**, & Lam, S. S. (2020). Production of biochar for potential catalytic and energy applications via microwave vacuum pyrolysis conversion of cassava stem. *Materials Science for Energy Technologies*, 3, 728-733. doi: 10.1016/j.mset.2020.08.002

7. Foong, S. Y., Liew, R. K., Yang, Y., Cheng, Y. W., **Yek, P. N. Y.**, Wan Mahari, W. A., . . . Lam, S. S. (2020). Valorization of biomass waste to engineered activated biochar by microwave pyrolysis: Progress, challenges, and future directions. *Chemical Engineering Journal*, 389. doi: 10.1016/j.cej.2020.124401
8. Ge, S., Foong, S. Y., Ma, N. L., Liew, R. K., Wan Mahari, W. A., Xia, C., **Yek, P. N. Y.**, . . . Lam, S. S. (2020). Vacuum pyrolysis incorporating microwave heating and base mixture modification: An integrated approach to transform biowaste into eco-friendly bioenergy products. *Renewable and Sustainable Energy Reviews*, 127. doi: 10.1016/j.rser.2020.109871
9. Lam, S. S., Su, M. H., Nam, W. L., Thoo, D. S., Ng, C. M., Liew, R. K., **Yek, P. N. Y.**, . . . Nguyen Vo, D. V. (2019). Microwave Pyrolysis with Steam Activation in Producing Activated Carbon for Removal of Herbicides in Agricultural Surface Water. *Ind Eng Chem Res*, 58(2), 695-703. doi: 10.1021/acs.iecr.8b03319
10. Lam, S. S., Tsang, Y. F., **Yek, P. N. Y.**, Liew, R. K., Osman, M. S., Peng, W., . . . Park, Y. K. (2019). Co-processing of oil palm waste and waste oil via microwave co-torrefaction: A waste reduction approach for producing solid fuel product with improved properties. *Process Safety and Environmental Protection*, 128, 30-35. doi: 10.1016/j.psep.2019.05.034
11. Lam, S. S., **Yek, P. N. Y.**, Ok, Y. S., Chong, C. C., Liew, R. K., Tsang, D. C. W., . . . Peng, W. (2020). Engineering pyrolysis biochar via single-step microwave steam activation for hazardous landfill leachate treatment. *J Hazard Mater*, 290, 121649. doi: <https://doi.org/10.1016/j.jhazmat.2019.121649>
12. Su, M. H., Azwar, E., Yang, Y., Sonne, C., **Yek, P. N. Y.**, Liew, R. K., . . . Lam, S. S. (2020). Simultaneous removal of toxic ammonia and lettuce cultivation in aquaponic system using microwave pyrolysis biochar. *Journal of Hazardous Materials*, 396. doi: 10.1016/j.jhazmat.2020.122610

13. Wan Mahari, W. A., Nam, W. L., Sonne, C., Peng, W., Phang, X. Y., Liew, R. K., **Yek, P. N. Y.**, . . . Lam, S. S. (2020). Applying microwave vacuum pyrolysis to design moisture retention and pH neutralizing palm kernel shell biochar for mushroom production. *Bioresource Technology*, 312. doi: 10.1016/j.biortech.2020.123572
14. Yaakob, M. N. A., Roslan, R., Salim, N., Mustapha, S. N. H., Zakaria, S., Chia, C. H., . . . **Yuh, P. Y. N.** (2020). Effect of temperature on the yield of lignin extracted using microwave-assisted acetosolv from empty fruit bunch fibers. *Materials Science Forum*, 981 MSF, 240-244. doi: 10.4028/[www.scientific.net/MSF.981.240](http://www.scientific.net/MSF.981.240)
15. **Yek, P. N. Y.**, Liew, R. K., Osman, M. S., Lee, C. L., Chuah, J. H., Park, Y. K., & Lam, S. S. (2019). Microwave steam activation, an innovative pyrolysis approach to convert waste palm shell into highly microporous activated carbon. *J Environl Manage*, 236, 245-253. doi: 10.1016/j.jenvman.2019.01.010
16. Kong, S. H., Lam, S. S., **Yek, P. N. Y.**, Liew, R. K., Ma, N. L., Osman, M. S., & Wong, C. C. (2019). Self-purging microwave pyrolysis: an innovative approach to convert oil palm shell into carbon-rich biochar for methylene blue adsorption. *Journal of Chemical Technology and Biotechnology*, 94(5), 1397-1405. doi: 10.1002/jctb.5884
17. Lam, S. S., Lee, X. Y., Nam, W. L., Phang, X. Y., Liew, R. K., **Yek, P. N. Y.**, . . . Rosli, M. H. N. B. (2019). Microwave vacuum pyrolysis conversion of waste mushroom substrate into biochar for use as growth medium in mushroom cultivation. *Journal of Chemical Technology and Biotechnology*, 94(5), 1406-1415. doi: 10.1002/jctb.5897
18. Liew, R. K., Chai, C., **Yek, P. N. Y.**, Phang, X. Y., Chong, M. Y., Nam, W. L., . . . Lam, S. S. (2019). Innovative production of highly porous carbon for industrial effluent remediation via microwave vacuum pyrolysis plus sodium-potassium hydroxide mixture activation. *J Clean Prod*, 208, 1436-1445. doi: <https://doi.org/10.1016/j.jclepro.2018.10.214>

19. **Yek, P. N. Y.**, Julaihi, M. R. M., Osman, M. S., Tiong, T. C., Lee, W. H., & Lee, C. L. (2018). Submerged Glow-Discharge Plasma: An Economical Approach to Convert Construction Scrap Metal into Nanomaterials. *E3S Web Conf.*, 34.
20. Liew, R. K., Azwar, E., **Yek, P. N. Y.**, Lim, X. Y., Cheng, C. K., Ng, J. H., . . . Lam, S. S. (2018). Microwave pyrolysis with KOH/NaOH mixture activation: A new approach to produce micro-mesoporous activated carbon for textile dye adsorption. *Bioresource Technology*, 266, 1-10. doi: 10.1016/j.biortech.2018.06.051
21. Muhammad, R. M. B. J., **Yuh Yek, P. N.**, Yatsu, S., & Watanabe, S. (2018). Formation of stainless steel nanoballs via submerged glow-discharge plasma and their microstructural analysis with evaluation of photocatalytic activity. *ISIJ International*, 58(6), 1162-1167. doi: 10.2355/isijinternational.ISIJINT-2017-473
22. Liew, R. K., Nam, W. L., Chong, M. Y., Phang, X. Y., Su, M. H., **Yek, P. N. Y.**, . . . Lam, S. S. (2018). Oil palm waste: An abundant and promising feedstock for microwave pyrolysis conversion into good quality biochar with potential multi-applications. *Process Safety and Environmental Protection*, 115, 57-69. doi: 10.1016/j.psep.2017.10.005
23. Ting, T. W., Hung, Y. M., Osman, M. S., & **Yek, P. N. Y.** (2018). Heat and flow characteristics of nanofluid flow in porous microchannels. *International Journal of Automotive and Mechanical Engineering*, 15(2), 5238-5250. doi: 10.15282/ijame.15.2.2018.7.0404
24. Wan Mahari, W. A., Chong, C. T., Cheng, C. K., Lee, C. L., Hendrata, K., **Yuh Yek, P. N.**, . . . Lam, S. S. (2018). Production of value-added liquid fuel via microwave co-pyrolysis of used frying oil and plastic waste. *Energy*, 162, 309-317. doi: <https://doi.org/10.1016/j.energy.2018.08.002>
25. **Yek, P. N. Y.**, Liew, R. K., Osman, M. S., Wong, C. C., & Lam, S. S. (2017). Microwave pyrolysis using self-generated pyrolysis gas as activating agent: An

innovative single-step approach to convert waste palm shell into activated carbon. *E3S Web Conf.*, 22.

26. Lam, S. S., Liew, R. K., Wong, Y. M., **Yek, P. N. Y.**, Ma, N. L., Lee, C. L., & Chase, H. A. (2017). Microwave-assisted pyrolysis with chemical activation, an innovative method to convert orange peel into activated carbon with improved properties as dye adsorbent. *Journal of Cleaner Production*, 162, 1376-1387. doi: 10.1016/j.jclepro.2017.06.131

**List of Awards:**

1. 1 Gold medal, PECIPTA (Kementerian Pendidikan Malaysia) – 2017
2. 1 Special Award, PECIPTA (Kementerian Pendidikan Malaysia) – 2017
3. 2 Gold medal, ITEX (Malaysian Invention and Design Society) – 2018
4. 2 Gold medal, PECIPTA (Kementerian Pendidikan Malaysia) – 2019
5. TOP Cited article 2019-2020 (WILEY) - 2020