

## Dr. Carol Sze Ki Lin

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### **Career Summary and Experience**

Dr. Carol Lin received her BEng in Chemicals and Material Engineering (1st class honour) from The University of Auckland, New Zealand. She received her Ph.D. degree in 2008 from the University of Manchester, the United Kingdom, under the direction of Professor Colin Webb. She started her academic career in 2010 as a visiting assistant professor at the Bioengineering Program, The Hong Kong University of Science and Technology (HKUST). She was promoted as an assistant professor in 2012 at the School of Energy and Environment, City University of Hong Kong. She was promoted to Associate Professor in 2017 in City University of Hong Kong. Dr. Carol Lin is internationally known for her work on waste-based biorefinery and its application to green and sustainable chemistry. She leads a team of over 10 postgraduate researchers, academic, scientific and support staff with a current grants portfolio of over HK\$13M and on-going collaborations with numerous companies. She is Principal Investigator on projects including:

- Metabolic engineering of *Yarrowia lipolytica* for the simultaneous production of succinic acid and polyhydroxyalkanoates. Hong Kong Research Grants Council (RGC), Early Career Scheme (ECS)
- Conversion of Food Waste into Polylactic acid Fibre (Innovation Technology Commission in Hong Kong)
- Bioconversion of Food Waste for Bio-Colorant Production (City University of Hong Kong)
- Bioconversion of Food and Beverage Waste to High Value-added Product (Innovation Technology Commission in Hong Kong)

### **Prizes and Honours**

- 2014 PepisoCo Global R&D Research Forum Award
- 2016 Golden Medal with Jury's Commendation in Geneva Invention Exhibition 2016 for ITF project titled "Conversion of food waste into polylactic acid fiber (PLA)"
- 2016 BESS Achievement Award 2016, Bioenergy Biorefinery Conference – Southeast Asia 2016 Sustainable Manufacturing of Food, Fuels and Chemicals, Bioenergy Society of Singapore (BESS)
- 2016 RITA Award 2016, The Hong Kong Research Institute of Textile and Apparel (HKRITA)
- 2017 The President's Awards, City University of Hong Kong

### **Appointments and activities**

- Organizer for the American Chemical Society (ACS) Division of Environmental Science (ENVR)'s 100th anniversary symposium 'Recent Development of Environmental Chemistry in Asia' the 248th ACS National Meeting, San Francisco, August 10-14, 2014
- Scientific committee member for Biorefinery for Food, Feed and Materials 2015, Montpellier, France, June 15-17, 2015
- Scientific committee member for Asia-Pacific Conference on Biotechnology for Waste Conversion (BIOWCHK) 2016, Hong Kong Baptist University, December 6-8, 2016
- Scientific committee member for the 2nd Green and Sustainable Chemistry conference, Hotel Intercontinental Berlin, Germany, May 14-17, 2017
- Scientific committee member for the 2nd International Conference on Biological Waste as Resource 2017 (BWR2017), Hong Kong Polytechnic University, Hong Kong, May 25-28, 2017
- Scientific committee member for ATHENS 2017 5th International Conference on Sustainable Solid Waste Management, Athens, Greece, June 21-24, 2017
- Organising committee member and Scientific committee member for Asia Pacific Conference of Chemical Engineering (APCCHE 2017), Hong Kong Convention and Exhibition Centre, August 23-27, 2017.

- International organisation committee member for 2nd International Conference on Bioresources, Energy, Environment, and Materials Technology (BEEM2018), Daemyung Resort, Gangwon-do, Korea, June 10-12, 2018
- Scientific committee member for 6th International Conference on Sustainable Solid Waste Management, Naxos Island, Greece, June 13–16, 2018
- Scientific committee member for WasteEng2018, the 7th International Conference on Engineering for Waste and Biomass Valorisation, Prague, Czech Republic, July 2-5, 2018
- Member of the Cost Action TD1203 on Food waste valorisation for sustainable chemicals, materials & fuels (EUBis)
- Member of the COST Action FP1306 on “Valorisation of lignocellulosic biomass side streams for sustainable production of chemicals, materials & fuels using low environmental impact technologies’
- Member of the G2C2 Green Chemistry network

### **Invited Lectures**

Recent Plenary and other major invited lectures in China (multiple locations), France, Germany, India, Hong Kong, Serbia

several including 2<sup>nd</sup> Green and Sustainable Chemistry, Berlin, USA (including ACS), China (The 4<sup>th</sup> Annual Workshop and Symposium of the Global Green Chemistry Centers Networks G2C2, Sichuan University), Biorefinery for Food & Fuels & Materials, Montpellier, France 2016 and numerous universities in Europe and China.

### **Major research areas**

Current major projects include those on waste and biomass valorisation for the sustainable production of chemicals, materials and fuels. Special focuses on food waste valorisation, textile waste valorisation, and green & sustainable chemistry.

### **Some Recent Publications (currently >80 publications in total; h index ca.22 plus over 4 patents: written or edited over 2 books)**

Kwan, T.H., Vlysidis, A., Wu, Z., Hu, Y., Koutinas, A., **Lin\*, C.S.K.** 2017. Lactic acid fermentation modelling of *Streptococcus thermophilus* YI-B1 and *Lactobacillus casei* Shirota using food waste derived media *Biochemical Engineering Journal*. **127**, 97-109.

Pensupa, N., Leu, S.-Y., Jing, H., Liu, H., Hu, Y., Wang, H., Du, C., **Lin\*, C.S.K.** 2017. Recent trends in Sustainable Textile Waste Recycling Methods: Current situation and future prospects. *Topics in Current Chemistry*. **375**(5), 76.

Haque, M.A., Yang, X., Ong, K.L., Tang, W.-T., Kwan, T.H., Kulkarni, S., **Lin\*, C.S.K.** 2017. Bioconversion of beverage waste to high fructose syrup as a value-added product. *Food and Bioprocess Processing*. **105**, 179-187.

Hu, Y., Daoud, W.A., Fei, B., Chen, L., Kwan, T.H., **Lin\*, C.S.K.** 2017. Efficient ZnO aqueous nanoparticle catalysed lactide synthesis for poly(lactic acid) fibre production from food waste. *Journal of Cleaner Production*, **165**, 157-167.

Yang, X., Wang, H., Li, C., **Lin\*, C.S.K.** 2017. Restoring of Glucose Metabolism of an engineered *Yarrowia lipolytica* for Succinic Acid Production via a Simple and Efficient Adaptive Evolution Strategy. *Journal of Agricultural and Food Chemistry*. **65**(20), 4133-4139.

Hu, Y., Kwan, T.H., Daoud, W.A., **Lin\*, C.S.K.** 2017. Continuous ultrasonic-mediated solvent extraction of lactic acid from fermentation broths. *Journal of Cleaner Production*. **145**, 142-150.

Pleissner, D., Lau, K.Y., **Lin\*, C.S.K.** 2017. Utilization of food waste in continuous flow cultures of the heterotrophic microalga *Chlorella pyrenoidosa* for saturated and unsaturated fatty acids production. *Journal of Cleaner Production*. **142**, 1417-1424.

- Li, C., Yang, X., Gao, S., Wang, H., **Lin\*, C.S.K.** 2017. High efficiency succinic acid production from glycerol via *in situ* fibrous bed bioreactor with an engineered *Yarrowia lipolytica*. *Bioresource Technology*. **225**, 9-16.
- Gao, C., Yang, X., Wang, H., Perez Rivero, C., Li, C., Cui, Z., Qi, Q., **Lin\*, C.S.K.** 2016. Robust succinic acid production from crude glycerol by using engineered *Yarrowia lipolytica*. *Biotechnology for Biofuels*. **9**(1), 179.
- Haque, M.A., Kachrimanidou, V., Koutinas, A., **Lin\*, C.S.K.** 2016. Valorization of Food Waste for Biocolorant and Enzyme Production by *Monascus purpureus*. *Journal of Biotechnology*. **231**, 55-64.