Curriculum Vitae

Jian Yu
Researcher
Hawaii Natural Energy Institute
School of Ocean & Earth Science & Technology
University of Hawaii at Manoa
Honolulu, Hawaii 96822, USA

Phone: (808) 956-5873 (office)
Fax: (808) 956-2336 (office)
E-mail: jianyu@hawaii.edu

A researcher with expertise in biomass pretreatment, microbial fermentation, bioreactor design, bioprocess engineering and simulation, bio-based chemicals, plastics and fuels.

I. Career Record

- Researcher (9/2013-present)/Hawaii Natural Energy Institute
- Associate Researcher (9/2002-8/2013)/Hawaii Natural Energy Institute
- Associate Professor (9/2001-8/2002)/Department of Ocean & Resources Engineering
  School of Ocean & Earth Science & Technology
  University of Hawaii at Manoa, Honolulu, Hawaii, USA

  Research activities: bio-based chemicals, plastics and fuels from renewable feedstocks, microbial metabolism and biocatalysis, bioreactor and bioprocess design and simulation, biomass pretreatment, microbial CO_2 fixation.
  Teaching activities: supervising graduate students, postdoctoral fellows and visiting scholars.

- Assistant Professor (9/1994-8/2001)
  Department of Chemical Engineering
  Hong Kong University of Science & Technology, Hong Kong

  Research activities: biodegradation and biotransformation of xenobiotic pollutants by white-rot fungi and extracellular enzymes, biopolyesters from food wastes.
  Teaching activities: providing regular courses to undergraduate and graduate students of chemical engineering, biochemical engineering, and environmental engineering programs; supervising graduate students and postdoctoral fellows.

- Post-doctoral Research Fellow (4/1993-8/1994)
  Department of Civil & Environmental Engineering
  University of Windsor, Ontario, Canada

  Research activities: peroxidase-catalysed biotransformation and polymerization of phenolic compounds, biological treatment of refinery wastewater.

- Industrial Postdoctoral Fellow (9/1991-1/1993)
  Science Council of British Columbia, Canada
  Pacific Industrial Fermentation Ltd., British Columbia, Canada

  Research activities: process analysis and improvement of commercial yeast fermentation, pilot plant yeast fermentation, dehydration of yeast cells in fluidized bed dryer.

- Lecturer (8/1985-7/1987)
  Department of Chemical Engineering
  Zhejiang University, Hangzhou, China

  Research activities: fluidized bed reactors, the influence of internal structures on gas-solid turbulence, kinetics of metal oxide catalysis and reactor modeling.
  Teaching activities: advising research projects of senior students in chemical engineering program.

II. Education

- Ph.D. (August 1987 – November 1991, received)
  Department of Chemical Engineering,
  University of British Columbia, Canada
  Dissertation title "Two-phase methanation of lactose in biofilm reactors"

- M.Sc. (September 1982 – October 1985, received)
  Department of Chemical Engineering
  Zhejiang University, China
  Thesis title "Kinetic analysis of selective ammoxidation of propylene on Mo-Bi oxide catalyst".

- B.Eng. (September 1978 – July 1982, received)
  Department of Chemical Engineering,
  Zhejiang University of Technology, China.

III. Professional and Administrative Service (2001-present)

- Proposal reviewer for USDA SBRI Phase I program (2016-2017).
- Proposal reviewer for USDA SBIR Phase II program (2015).
- Editorial Board Member for International Journal of Agricultural and Biological Engineering (2012,2013,2014, 2015)
- External reviewer of doctoral dissertation for the University of Queensland, Australia (2012)
- Proposal reviewer for Cade Museum Fund Innovation Projects (2012)
- Proposal reviewer for Agriculture and Agri-Food Canada (2011)
- Proposal reviewer for Missouri Life Sciences Research Board (2007, 2008, 2009,2010, 2011)
- Proposal reviewer for the US-Israel Binational Agricultural Research and Development Fund (2010)

- Member of Editorial Board, Journal of Biobased Materials and Bioenergy (American Scientific Publishers, California) (2008, 2009)
- Session chair of the 1st World Congress of Industrial Biotechnology, Hangzhou, China (May, 2008)
- Proposal reviewer for 2007 Strategic Research Group Grant, Science Foundation Arizona (2007)
- Organization committee of the 1st Pacific Rim Biotechnology Conference, Honolulu, Hawaii (January, 2006)
- Proposal reviewer for 2006 Small Business Innovation Research (SBIR), United States Department of Agriculture (2006).
- Proposal reviewer for 2006 Cooperative Grants Program, US Civilian Research and Development Foundation (CRDF) (2006).
- Proposal reviewer for 2006 Competitions "Bioenergy, Environment, Health", The Consortium for Plant Biotechnology Research, USA (2005).
- Proposal reviewer for Bioproducts Research Program, Ontario Ministry of Agriculture and Food, Canada (2005).
- Panel member of Biobased Products and Bioenergy Production Research Program, National Research Initiative Competitive Grants Program, The United States Department of Agriculture (2004).
- Session chair of the 4th Asia-Pacific Marine Biotechnology Conference, Honolulu, Hawaii (April 2002)
- Panel member of Hong Kong Environmental Protection Department for Test Guidelines of Biodegradable Containers and Bags (2000, 2001).
- Member of American Chemical Society (1997-2012).
- Member of Bio-Environmental Polymer Society (2000-2006)
- Graduate Faculty, Molecular Bioscience & Bioengineering, University of Hawaii at Manoa (2002 – present).
- Faculty Searching Committee, Hawaii Natural Energy Institute (2016, 2017)
- Tenure and Promotion Review Committee of UHM (2015)
- Faculty representative alternate on the Awards Committee of Manoa Faculty Senate (2012, 2013, 2014, 2015)
- Departmental personnel committee of Hawaii Natural Energy Institute (2008-2017)
- Institute coordinator of Aloha United Way (2005, 2008)
- Faculty Searching Committee of Marine Bioproducts Engineering Center, University of Hawaii at Manoa (2002, 2003)
- PhD qualifying exam coordinator, Department of Ocean & Resources Engineering, University of Hawaii at Manoa (2001, 2002).

IV. Research Projects and Grants (2001-present)

❖ Liquid fuels from synthesis gas – APRISES'15 (3/1/2016-6/30/2020)
Task investigator, $138,769 from the Office of Naval Research

❖ PHA bioplastics from biomass (09/01/2015-08/30/2020)
Principal investigator, $1,419,011 from Bio-on s.r.l. Italy

- Liquid fuels from synthesis gas-APRISES'14 (01/01/2015-06/30/2017)
  Task investigator, $138,104 from the Office of Naval Research

- Liquid fuels from synthesis gas-APRISES'13 (11/01/2013-06/30/2016)
  Task investigator, $138,831 from the Office of Naval Research

- Liquid fuels from synthesis gas-APRISES'12 (3/2013 – 9/2015)
  Task investigator, $139,785 from the Office of Naval Research

- Biochemical conversion of synthesis gas into liquid fuels-APRISES'11 (2012-2014)
  Task investigator, $139,725 from the Office of Naval Research

- Bio-refining of sugar beet byproducts (2012-2015)
  Principal investigator (PI), $397,277 from Bio-On s.r.l., Italy

- HEET10-Biochemical conversion of syngas into liquid fuels (2011-2013)
  Task investigator, $134,748 from the Office of Naval Research

- PHA production from crude glycerol (2010-2012)
  Principal investigator (PI), $345,516 from Bio-On s.r.l., Italy.

- Biofuel production from Nonedible bio-oils (2010-2012)
  Principal investigator (PI), $149,290 from Kuehnle AgroSystems Inc. & Department of Navy

- HEET09-Biochemicals into liquid fuels (2009-2012)
  Task investigator, $133,856 from the Office of Naval Research

- Cane molasses as the feedstock of PHA bioplastics (2009-2011).
  Principal investigator (PI), $390,138 from Bio-On s.r.l, Italy.

- HEET08 - Biochemical conversion of synthesis gas into liquid fuels (2009-2011).
  Task investigator, $123,467 from the Office of Naval Research.

- Production of bioplastics from sugar manufacturing wastes (2008-2010).
  Principal investigator (PI), $389,161 from Bio-On s.r.l, Italy.

- Training program for Bio-On (2008-2012).
  Principal investigator (PI), $66,718 from Bio-On s.r.l, Italy.

- Energy efficient biomass refining into fuel ethanol and bioplastics (2008-2009).
  Principal investigator (PI), $48,000 from the Consortium for Plant Biotechnology Research Inc. & US Department of Energy.

- Scale-up economics of PHA biorefinery (2007-2009).

Principal investigator (PI), $31,946 from EGI Technologies LLC.

- Mini-pilot plant bioreactor for production of bioplastics (2004-2006).
  Principal investigator (PI), $99,595 from I-PHA BioPolymers Ltd.

- Pilot plant bioreactor design for production of bioplastic materials from food scraps (2002-2003). Principal investigator (PI), $50,000 from I-PHA Biopolymers Ltd.

- Formulation engineering of extremophile enzymes (2002-2003)
  Task investigator, $79,862 from Marine Bioproducts Engineering Center at the University of Hawaii and National Science Foundation.

V. Research Inventions and Patents

1. Pradeep Munasinghe and Jian Yu. A novel bioreactor for high efficiency gas utilization by microbes. Provisional patent 62433748. December 13, 2016.

2. Jian Yu. Process for producing microbial copolyesters from sucrose-containing feedstocks. World Intellectual Property Organization, WO2013/072723 A1, 23 May 2013.

3. Jian Yu. Using cell debris generated from PHA recovery for enhanced cell growth and biopolyester formation. World Intellectual Property Organization, WO2011/045625 A1. 21 April 2011.

4. Jian Yu. Recovery and purification of polyhydroxyalkanoates from PHA-containing cell mass. US Patent 7,514,525, awarded April 2009.

5. Jian Yu. Production of biodegradable thermoplastic materials from organic wastes US Patent No. 7,141,400, awarded July 2007
   Taiwanese Patent No. I268288, awarded August 2007
   Chinese Patent for Invention No. ZL03802258.3, awarded July 2007
   Malaysian Patent No. MY-131060-A, awarded December 2007
   Singapore Patent No. 105875, awarded January 2003
   Japanese Patent No. 562306, awarded March 2009
   Korea Patent No. 10-0923070, awarded January 2010.

VI. Research Publications

A. Book chapters

1) Jian Yu (2013). Production of polyhydroxyalkanoates in biomass refining. In: S.T. Yang, H.A. El-Enshasy, N. Thongchul (editors), Bioprocessing Technologies in Biorefinery for Sustainable Production of Fuels, Chemicals, and Polymers, Pp415-426, AIChE, Wiley.

2) Jian Yu (2012). Clean production of bioplastic and bio-oil from solar energy and carbon dioxide. Nanotech 2012 Vol. 3, Pp481-484, Nano Science and Technology Institute, USA.

3) Jian Yu (2012). Artificial photosynthetic system for high efficiency capture and conversion of solar energy and carbon dioxide. IERI Lecture Notes in Information Technology: Power and Energy Systems, Vol 13, Pp 64-69.

4) Jian Yu, Michael Porter and Matt Jaremko (2012). Generation and utilization of microbial biomass hydrolysates in recovery and production of poly(3-hydroxybutyrate). In: M.D. Matovic (editor), Biomass Now: Cultivation and Utilization, Pp33-48, InTech, Rijeka, Croatia.

5) **Jian Yu** (2010). Biosynthesis of polyhydroxyalkanoates from 4-ketovaleric acid in bacterial cells. In: H N Cheng & Richard A Gross (editors), Green Polymer Chemistry: Biocatalysis and Biomaterials, ACS Symposium 1043, Pp161-173.

6) Jian Yu (2009**)**. Production of green bioplastics from agri-food chain residues and co-products. In: Keith Waldron (editor), Handbook of Waste Management and Co-product Recovery in Food Processing, Vol 2. Pp 515-531, Woodhead Publishing Ltd. Cambridge, UK.

7) **Jian Yu** and Pat Takahashi (2007). Biophotolysis-based hydrogen production by cyanobacteria and green microalgae. In: A. Mendes-Vilas (editor), Communicating Current Research and Educational Topics and Trends in Applied Microbiology. Microbiology Series No.1 Vol. 1, Pp 79-89, Formatex, Badajoz, Spain.

8) **Jian Yu** (2006). Microbial production of bioplastics from renewable resources. In: S.T. Yang (editor), Bioprocessing of Value Added Products from Renewable Resources. Pp 585-610, Amsterdam, Elsevier.

B. Peer-reviewed research articles

1. Yue Lu, Jian Yu (2017). Comparison analysis on the energy efficiencies and biomass yields in microbial CO2 fixation, *Process Biochemistry*, http://dx.doi.org/10.1016/j.procbio.2017.07.007

2. Yue Lu, Jian Yu (2017). Gas mass transfer with microbial CO2 fixation and poly(3-hydrobybutyarte) synthesis in a packed bed bioreactor, Biochemical Engineering Journal, 122:13-21.

3. Shimin Kang, Jian Yu (2016). An intensified reaction technology for high levulinic acid concentration from lignocellulosic biomass, *Biomass and Bioenergy*, 95(2016):214-220.

4. Jian Yu, Pradeep Munasinghe, Shimin Kang (2015). Green refinery of carbon dioxide, water and solar energy, *CIESC Journal*, 66(8):3225-3232.

5. Shimin Kang, Jian Yu (2015). Effect of methanol on formation of levulinates from cellulosic biomass, *Industrial & Engineering Chemistry Research* 54:11552-11559.

6. Shimin Kang, Jian Yu (2015). A gasoline-grade biofuel formed from renewable polyhydroxybutyrate on solid phosphoric acid, *Fuel* 160:282-290.

7. Shimin Kang, Jian Yu (2015). Reaction routes in catalytic reforming of poly(3-hydroxybutyrate) into renewable hydrocarbon oil, *RSC Advances* 5:30005-30013.

8. Shimin Kang, Jian Yu (2015). Hydrophobic organic compounds from hydrothermal liquefaction of bacterial biomass, *Biomass and Bioenergy* 74:92-95.

9. Nuttapol Tanadchangsaeng, Jian Yu (2015). Thermal stability and degradation of biological terpolyesters over a broad temperature range, *Journal of Applied Polymer Science* 132:41715-41815.

10. Jian Yu (2014). Bio-based products from solar energy and carbon dioxide, *Trends in Biotechnology* 32:5-10.

11. Shimin Kang, Jian Yu (2014). One-pot production of hydrocarbon oil from poly(3-hydroxybutyrate), *RSC Advances* 4:14320-14327.

12. Peifeng Tang, Jian Yu (2014). Kinetic analysis on deactivation of a solid Bronsted acid catalyst in conversion of sucrose to levulinic acid, *Industrial & Engineering Chemistry Research* 53(29):11629-11637.

13. Jian Yu, Allexa Dow, Sricanth Pingali (2013). The energy efficiency of carbon dioxide fixation by a hydrogen-oxidizing bacterium, *International Journal of Hydrogen Energy* 38:8683-8690.

14. Nuttapol Tanadchangsaeng, Jian Yu (2013). Miscibility of natural polyhydroxyalkanoate blend with controllable material properties, *Journal of Applied Polymer Science* 129(4):2004-2016.

15. Nuttapol Tanadchangsaeng, Jian Yu (2012). Microbial synthesis of polyhydroxybutyrate from glycerol: gluconeogenesis, molecular weight and material properties of biopolyester. *Biotechnology and Bioengineering* 109: 2808-2818.

16. Matt Jaremko, Jian Yu (2011). The initial metabolic conversion of levulinic acid in *Cupriavidus necator*. *Journal of Biotechnology* 155:293-298.

17. Michael Porter, Jian Yu (2011). Crystallization kinetics of poly(3-hdyroxybutyrate) granules in different environmental conditions. *Journal of Biomaterials and Nanobiotechnology*, 2:301-310.

18. Michael Porter, Jian Yu (2011). Monitoring the *in situ* crystallization of biopolyester granules in *Ralstonia eutropha* via infrared spectroscopy. *Journal of Microbiological Methods*, 87:49-55.

19. **Jian Yu**, Lilian X L Chen, Shun Sato (2009). Biopolyester synthesis and protein regulations in *Ralstonia eutropha* on levulinic acid and its derivatives from biomass refining. *Journal of Biobased Materials and Bioenergy* 3:113-122.

20. Sung-Eun Lee, Qing X Li, **Jian Yu** (2009). Diverse protein regulations on PHA formation in *Ralstonia eutropha* on short chain organic acids. *International Journal of Biological Sciences* 5(3):215-225.

21. **Jian Yu** and Lilian Chen (2008). The greenhouse gas emissions and fossil energy requirement of bioplastics from cradle to gate of a biomass refinery. *Environmental Science & Technology* 42(18): 6961-6966.

22. **Jian Yu** and Heiko Stahl (2008). Microbial utilization and biopolyester synthesis of bagasse hydrolysates. *Bioresource Technology* 99:8042-8048.

23. Zhe Xu and **Jian Yu** (2008). Hydrodynamics and mass transfer in a novel multi- airlifting membrane bioreactor. *Chemical Engineering Science* 63:1941-1949.

24. **Jian Yu** and Lilian Chen (2006). Cost effective recovery and purification of polyhydroxyalkanoates by selective dissolution of cell mass. *Biotechnology Progress* 22, 547-553.

25. Sun-En Lee, Qing X. Li and **Jian Yu** (2006). Proteomic examination of *Ralstonia eutropha* in cellular responses to formic acid. *Proteomics* 6(15):4259-4268.

26. Sonia Campbell, Lilian Chen, **Jian Yu**, Qing X. Li (2005). Adsorption and analysis of the insecticides thiamethoxam and indoxacarb in Hawaiian soils, *Journal of Agricultural and Food Chemistry* 53(13):5373-5376.

27. **Jian Yu**, David Plackett, Lilian X L Chen (2005). Kinetics and mechanism of the monomeric products from abiotic hydrolysis of poly[(R)-3-hydroxybutyrate] under acidic and alkaline conditions. *Polymer Degradation and Stability* 89:289-299.

28. Lilian X. L. Chen and **Jian Yu (**2005**)**. Abiotic hydrolysis of poly[(R)-3-hydroxybutyrate] in acidic and alkaline media. *Macromolecular Symposium* 224:35-46.

29. Gary Delanoy, Qing Li and **Jian Yu (**2005**)**. Activity and stability of laccase in conjugation with chitosan. *International Journal of Biological Macromolecules* 35:89-95.

30. **Jian Yu** and Yingtao Si (2004). Metabolic carbon fluxes and biosynthesis of polyhydroxyalkanoates in *Ralstonia eutropha* on short chain fatty acids. *Biotechnology Progress* 20(4):1015-1024.

31. Guochen Du, Lilian X. L. Chen and **Jian Yu** (2004). High-efficiency production of bioplastics from biodegradable organic solids. *Journal of Polymers and the Environment* 12:89-94

32. Siu-Wah Tse and **Jian Yu** (2003). Adsorptive immobilization of a *Pseudomonas* strain on solid carriers for augmented decolourization in a chemostat bioreactor. *Biofouling* 19(4): 223-233.

33. **Jian Yu** (2003). Biodegradation-based polymer surface erosion and surface renewal for foul-release at low ship speeds. *Biofouling* 19(suppl.): 83-90.

34. Lo Wing Hong and **Jian Yu** (2003). Environmental factors and kinetics of microbial degradation of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) in an aqueous medium. *Journal of Applied Polymer Science* 87(2):205-213.

35. Guocheng Du and **Jian Yu** (2002). Metabolic analysis on fatty acids utilization by *Pseudomonas oleovorans*: mcl-poly(3-hydroxyalkanoates) synthesis versus β-oxidation. *Process Biochemistry* 38:325-332.

36. Guocheng Du and **Jian Yu** (2002). Green technology for conversion of food scraps to biodegradable thermoplastic polyhydroxyalkanoates. *Environmental Science & Technology* 36(24):5511-5516.

37. Xu Ping, Li Fuli, **Yu Jian,** Ma Cuiqing, Zhong Jianjiang, Qu Yinbo & H.D. Blankespoor (2002). Microbial desulfurization of fuel oil, *Chinese Science Bulletin* 47(5): 365-369.

38. **Jian Yu,** Yingtao Si and Wan Keung R Wang (2002). Kinetics modeling of inhibition and utilization of mixed volatile fatty acids in the formation of polyhydroxyalkanoates by *Ralstonia eutropha*, *Process Biochemistry* 37:731-738.

39. Wing Hung Lo and **Jian Yu** (2002). Effects of energy dissipation rate and surface erosion on the biodegradation of poly(hydroxybutyrate-co-hydroxyvalerate) and its blends with synthetic polymers in an aquatic medium. *Journal of Applied Polymer Science* 83:1036-1045.

40. G. Du, Y. Si and **J. Yu** (2001). Inhibitory effect of medium-chain-length fatty acids on synthesis of polyhydroxyalkanoates from volatile fatty acids by *Ralstonia eutropha*. *Biotechnology Letters* 23:1613-1617.

41. Guocheng Du, Jian Chen, **Jian Yu** and Shiyi Lun (2001). Kinetic studies on poly-3-hydroxybutyrate formation by *Ralstonia eutropha* in a two-stage continuous culture system. *Process Biochemistry* 37(3):219-227.

42. M. Ji, **J. Yu**, H. Chen and P.L. Yue (2001). Removal of slowly biodegradable COD in combined thermophilic UASB and MBBR systems. *Environmental Technology* 22(9):1069-1079.

43. **Jian Yu** and Yingtao Si (2001). A dynamic study and modeling of the formation of polyhydroxyalkanoates combined with treatment of high strength wastewater, *Environmental Science & Technology*, 35:3584-3588.

44. Guocheng Du, Jian Chen, **Jian Yu** and Shiyi Lun (2001). Feeding strategy of propionic acid for production of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) with *Ralstonia eutropha*. *Biochemical Engineering Journal* 8:103-110.

45. **Jian Yu**, Xiaowei Wang and Po Lok Yue (2001). Optimal decolorization and kinetic modeling of synthetic dyes by *Pseudomonas* strains. *Water Research* 35(15):3579-3586.

46. Guocheng Du, Jian Chen, **Jian Yu** and Shiyi Lun (2001). Continuous production of poly-3-hydroxybutyrate by *Ralstonia eutropha* in a two-stage culture system. *Journal of Biotechnology* 88:59-65.

47. **Jian Yu** and Jianping Wang (2001). Metabolic flux modeling of detoxification of acetic acid by *Ralstonia eutropha* at slightly alkaline pH levels. *Biotechnology and Bioengineering* 73(6):458-464.

48. Wang J. and **Yu J** (2001). Kinetic analysis on formation of poly(3-hydroxybutyrate) from acetic acid by *Ralstonia eutropha* under chemically defined conditions. *Journal of Industrial Microbiology and Biotechnology* 26:121-126.

49. **Jian Yu** (2001). Production of PHA from starchy wastewater via organic acids. *Journal of Biotechnology* 86:105-112.

50. Jianping Wang and **Jian Yu** (2000). Kinetic analysis on inhibited growth and poly(3-hydroxybutyrate) formation of *Alcaligenes eutrophus* on acetate under nutrient-rich conditions. *Process Biochemistry* 36:201-207.

51. Fuming Zhang and **Jian Yu** (2000). Decolorisation of acid violet 7 with complex pellets of white rot fungus and activated carbon. *Bioprocess Engineering* 23:295-301.

52. Samiapillai Maxwell and **Jian Yu** (2000). Selective desulphurisation of dibenzothiophene by a soil bacterium: microbial DBT desulphurisation. *Process Biochemistry* 35:551-556.

53. **Jian Yu**, Hong Chen, Min Ji and Po Lock Yue (2000). Distribution and change of microbial activity in combined UASB and AFB reactors for wastewater treatment. *Bioprocess Engineering* 22(4): 315-322.

54. **Jian Yu**, Fuming Zhang, Tommy Low and Po Lock Yue (2000). Biodegradable thermoplastic blends for management of municipal solid waste. *Proceedings of the 3rd Asia Pacific Conference on Sustainable Energy and Environmental Technologies, 3-6 December 2000, Hong Kong*, Pp 159-163.

55. **Jian Yu**, Chumwai Tam, Yingtao Si (2000). Production of polyhydroxyalkanoates from starchy waste in membrane-coupled bioreactors. *Proceedings of the 5th international symposium on Environmental Biotechnology, 9-13 July 2000, Kyoto, Japan*, Pp 969-972.

56. **Jian Yu**, Min Ji and Po Lock Yue (1999). A three-phase fluidized bed reactor in the combined anaerobic/aerobic treatment of wastewater. *Journal of Chemical Technology and Biotechnology*, 74:619-626.

57. Yuxing Wong and **Jian Yu** (1999). Laccase-catalysed decolorization of synthetic dyes. *Water Research* 33(16):3512-3520.

58. Samiapillai Maxwell and **Jian Yu** (1999). Microbial desulfurization of Dibenzothiophene. *Proceedings of Asia-Pacific Chemical Reaction Engineering Symposium'99, 13-16 June, Hong Kong*, Pp 455-460.

59. **Jian Yu** and Ruan Wenquan (1999). Utilization of volatile acids by *Alcaligenes eutrophus* for production of biodegradable thermoplastics. *Proceedings of Asia-Pacific Chemical Reaction Engineering Symposium'99, 13-16 June, Hong Kong,* Pp 139-144.

60. Zhonming Zhen and **Jian Yu** (1998). Stresses on immobilized *Phanerochaete chrysosporium* hyphae in submerged cultures for ligninase production. *The Canadian Journal of Chemical Engineering* 76:784-789.

61. Yuxin Wang and **Jian Yu** (1998). Adsorption and degradation of synthetic dyes on the mycelium of *Trametes versicolor*. *Water Science & Technology* 38(4-5): 233-238.

62. Cho Sing and **Jian Yu** (1998). Copper adsorption and removal from water by living mycelium of white-rot fungus *Phanerochaete chrysosporium*. *Water Research*, 32(9):2746-2752.

63. Yuxin Wang and **Jian Yu** (1998). Adsorption and degradation of synthetic dyes on the mycelium of *Trametes versicolor*. *Proceedings of IAWQ 19th Biennial International Conference 21-26 June 1998, Vancouver, Canada,* Pp 232-237.

64. Min Ji, **Jian Yu,** Hong Chen and Po Lock Yue (1998). Formation of fatty acids from thermophilic anaerobic digestion of starch wastewater. *Proceedings of Sustainable Energy and Environmental Technologies, 14-17 June, Queens land, Australia,* Pp 277-282.

65. Lawrence Young and **Jian Yu** (1997). Ligninase-catalysed decolorization of synthetic dyes. *Water Research* 31(5):1187-1193.

66. Siu-Wah Tse and **Jian Yu** (1997). Flocculation of *Psuedomonas* with aluminum sulfate for enhanced biodegradation of synthetic dyes. *Biotechnology Techniques* 11(7): 479-482.

67. Samuel Lee and **Jian Yu** (1997). Production of biodegradable thermoplastics from municipal sludge by a two-stage bioprocess. *Resources, Conservation and Recycling* 19:151-164.

68. **Jian Yu** (1997). Effect of hydraulic shear stress on immobilized *Phanerochaete chrysosporium* and its production of lignin peroxidase. *Proceedings of Asian Pacific Biochemical Engineering Conference, 20-23 October 1997, Beijing, China,* Pp 691-694.

69. Lawrence Young and **Jian Yu** (1996). Factors affecting dye degradation in white-rot fungal process. *Proceedings of the 7th Congress of the Asian Pacific Confederation of Chemical Engineers, May 3-8, Taipei, Taiwan,* Pp 472-476.

70. Cho Sing and **Jian Yu** (1996). Biosorption of copper by living *Phanerochaete chrysosporium* mycelium, *Proceedings of 3rd International Symposium of the International Society for Environmental Biotechnology, 15-20 July, Boston, USA,* Pp 157-169.

71. **Jian Yu**, Keith E. Taylor, Huixian Zou, Nihar Biswas, and Jatinder K. Bewtra (1994). Phenol conversion and dimeric intermediates in Horseradish peroxidase-catalyzed phenol removal from water. *Environmental Science & Technology*, 28(8):2154-2160.

72. **Jian Yu** and Kenneth L. Pinder (1994). Effective diffusivities of volatile fatty acids in methanogenic biofilms. *Bioresource Technology*, 48:155-161.

73. **Jian Yu** and Kenneth L. Pinder (1993). Utilization of volatile fatty acids in methanogenic biofilms. *Bioresource Technology*, 46(3):241-250.

74. **Jian Yu** and K.L. Pinder (1993). Diffusion of lactose in acidogenic biofilms. *Biotechnology & Bioengineering*, 41(7):736-744.

75. **Jian Yu** and Kenneth L. Pinder (1993)**.** Intrinsic fermentation kinetics of lactose in acidogenic biofilms. *Biotechnology & Bioengineering*, 41(4): 479-488.

76. **Jian Yu** and Kenneth L. Pinder (1992). Build-up of symbiotic methanogenic biofilms on solid supports. *Biotechnology Letters* 14(10):989-994.

77. **Jian Yu** and Dai Qing-lian (1988). Ammoxidation of propylene on a Multicomponent MoBi catalyst (II): Consumption rate of NH_3. *Petrochemical Technology* 17:140-144.

78. **Jian Yu**, Zhang Hong, Dai Qin-Lian and Chen Gan-Tang (1987). Ammoxidation of propylene on a multicomponent MoBi catalyst (I): Effect of reaction atmosphere on redox catalyst. *Petrochemical Technology* 16:472-476.

C. Selected presentations in conferences and seminars since 2001

1) Jian Yu (2016). A two-stage process to produce ductile bioplastics from cellulosic biomass. World Congress on Industrial Biotechnology, April 17-20, San Diego, CA.

2) Jian Yu (2015). A green plastic formed directly from carbon dioxide and sunlight. International Conference and Exhibition on Biopolymers and Bioplastics, August 10-12, 2015, San Francisco, CA.

3) Jian Yu (2015). Direct production of bioplastics and chemicals from carbon dioxide and solar energy (Best contribution award). 7th European Meeting on Chemical Industry and Environment, June 10-12, Tarragona, Spain.

4) Jian Yu (2014). Bio-based drop-in fuels from solar electricity and carbon dioxide. BIT's 4th Annual World Congress of Bioenergy, September 21-23, Qingdao, China.

5) Pradeep Munasinghe, Shimin Kang, Jian Yu (2014). Renewable hydrocarbon oils and chemicals from solar energy and carbon dioxide. Asia Pacific Clean Energy Summit and Expo, September 15-17, Honolulu, Hawaii.

6) Jian Yu (2013). Direct conversion of CO_2 into biopolyester with solar energy and water. American Chemical Society National Meeting, September 8-12, Indianapolis, Indiana.

7) Jian Yu (2013). A novel biorefinery without biomass feedstock. 9th European Congress of Chemical Engineering (ECCE9)/ 2nd European Congress of Applied Biotechnology (ECAB2), April 21-25, The Hague, Netherlands.

8) Jian Yu (2012). Can bioplastics be produced in Hawaii? An invited speech at Hawai'i Futures Summit 2012 by Vision Foresight Strategy LLC, Oct. 5-6, Honolulu, Hawaii.

9) Jian Yu (2012). Clean production of bioplastics and bio-oil from solar energy and carbon dioxide. CleanTech Conference & Showcase 2012, June 18-21, Santa Clara, California.

10) Matt Jaremko, Nuttapol Tanadchangsaeng, and Jian Yu (2012). Production of polyhydroxybutyrate from residual algal biomass of biodiesel extraction, 2nd International Conference on Algal Biomass, Biofuels & Bioproducts, June 10-13, San Diego, California.

11) Jian Yu (2012). Production of biobased plastics and chemicals from solar energy and carbon dioxide. Presented in a seminar for UH Pacific Asian Center for Entrepreneurship Program, June 12, Honolulu, Hawaii.

12) Jian Yu (2012). Artificial photosynthetic system for high efficiency capture and conversion of solar energy and carbon dioxide. 2012 International Conference on Power and Energy Systems, April 11-13, Hong Kong.

13) Jian Yu (2011). Biorefining of microalgal oil for alternative fuel and plastic. UH Technology Showcase seminar, June 7, Honolulu, HI.

14) Jian Yu (2011). Banagrass refining for biobased fuels and plastics. Asian Congress on Biotechnology 2011, May 11-15, Shanghai, China.

15) Jian Yu (2011). Energy efficient biomass refining into fuel ethanol and bioplastics. 2011 Symposium of Consortium of Plant Biotechnology Research (CPBR), March 1-2, Washington DC.

16) Jian Yu (2010). In vitro crystallization of poly(3-hydroxybutyrate) granules in biopolyester recovery and purification. Pacifichem 2010 Congress, December 17-18, Honolulu, Hawaii.

17) Michael Porter, Jian Yu (2010). Crystallization of poly(3-hdyroxybutyrate) granules under changing environmental conditions. Polymers and the Environment: Emerging Green Technologies and Science, Bioenvironmental Polymer Society, 13-15 October, Toronto (BEPS student research award).

18) Jian Yu (2010). Clean technology of biomass refining for fuel ethanol production. Asia Pacific Clean Energy Summit and Expo, August 31-September 3, Honolulu, Hawaii.

19) Jian Yu (2009). Can we make transportation fuels from aquatic biomass? April 21, Hawaii Natural Energy Institute, Honolulu, Hawaii.

20) Jian Yu (2009). In vivo crystallization of polyhydroxybutyrate for polymer recovery and purification. The 8th World Congress of Chemical Engineering, August 23-27, Montreal, Canada.

21) Jian Yu (2009). Biosynthesis of polyhydroxyalkanoates by bacterial cells on 4-ketovaleric acid. The 238th American Chemical Society National Meeting, August 16-20, Washington DC.

22) Jian Yu (2009). Production and application of green bioplastics. UH Technology Showcase, March 31, Honolulu, Hawaii.

23) Jian Yu (2008). New technology and environmental impacts of bioplastics co-produced with cellulosic ethanol from a mini-biorefinery. World Congress of Industrial Biotechnology 2008, May 18-21, Hangzhou, China.

24) Jian Yu (2008). Potential, feasibility and environmental impacts of polyhydroxyalkanoates production from biomass refining. 235th American Chemical Society National Meeting, April 6-10, New Orleans.

25) Jian Yu (2007). Formation of polyhydroxyalkanoates with microbial utilization of biomass hydrolysates. International Symposium on Polymers and the Environment: Emerging Technology and Science. October 17-20, Vancouver, Washington.

26) Jian Yu (2007). Engineering aspects of biomass refining into biofuels, biochemicals and bioplastics. Pacific Rim Summit on Industrial Biotechnology and Bioenergy, November 14-16, Honolulu, Hawaii.

27) Jian Yu (2007). Energy efficient biorefining of biomass into fuel ethanol and bioplastics. CPBR Symposium 2007, Feb. 11-15, Washington DC.

28) Jian Yu (2007). Biorefining of renewable feedstocks for biofuels and bioplasitcs. Hawaii Natural Energy Institute, April 3, Honolulu, Hawaii.

29) Jian Yu (2006). Production of PHA bioplastics with biorefinery of biomass. The 2nd International Conference on Technology & Application of Biodegradable/Biobased Plastics (ICTABP2), Oct. 13-15. Hangzhou, China

30) Jian Yu (2006). Eco-friendly bioplastics from renewable feedstocks: microbial conversion and downstream recovery. The 10th Annual Green Chemistry & Engineering Conference, June 26-30, 2006, Washington DC.

31) Jian Yu (2006). Biorefinery of biomass into fuel and thermoplastics. Hawaii Natural Energy Institute, May 9, Honolulu, Hawaii.

32) Jian Yu (2005). The pH sensitive laccase-chitosan conjugates for repeated homogeneous biocatalysis and enzyme recovery. Pacifichem 2005 Congress, December 15-20, Honolulu, USA.

33) Jian Yu (2005). Microbial production of novel PHA bioplastics from lignocellulosic biomass. The 2nd World Congress on Industrial Biotechnology and Bioprocessing, April 20-23, Orlando, USA.

34) Jian Yu (2005). Physiology of carbohydrate accumulation and anaerobic fermentation to biohydrogen in microalgal cultures. Feb 21-23, Clemson University, Clemson, USA.

35) Jian Yu (2004). Formation mechanism and kinetics of monomeric compounds from abiotic degradation of biopolyester poly[R-3-hydroxybutyrate]. The 8th World Conference on Biodegradable Polymers and Plastics. June 1-4, Seoul, Korea.

36) Jian Yu (2003). Metabolic carbon flow in biosynthesis of PHA on mixed organic acids. 11th Annual Meeting of the BioEnvironmental Polymer Society, August 10-13, Denver, USA.

37) Jian Yu (2003). Green technology: Renewable Biomass to Bioplastics. Technology Showcase of University of Hawaii. June 12, Honolulu, Hawaii.

38) Jian Yu (2002). High efficiency production of bioplastics from food scraps. 10th Annual Meeting of the BioEnvironmental Polymer Society, 10-14 Sept. Albuquerque, New Mexico.

39) Jian Yu (2002). Bio-surface erosion and surface renewal for foul release under low hydrodynamic shear stress. 11th International Congress on Marine Corrosion and Fouling, 21-26 July, San Diego, CA.

40) Jian Yu (2002). Non-toxic control of marine biofouling on hulls. Department of Ocean & Resources Engineering, University of Hawaii. Jan. 23.

D. Technical reports

1) Jian Yu (2013). PHA bioplastics production from crude glycerol. A project report to Bio-on s.r.l., Bologna, Italy, Pp 1-38.

2) Jian Yu (2011). PHA bioplastics production: cane molasses as the feedstock. A project report to Bio-On s.r.l, Bologna, Italy, Pp 1-46.

3) Jian Yu (2009). A pilot plant for PHA fermentation and recovery. *A design report to Bio-On s.r.l, Bologna, Italy*, Pp 1-44.

4) Jian Yu (2008). PHA bioplastics production from sugar beet pulp. *A project report to Bio-On srl, Bologna, Italy*, Pp 1-27.

5) Jian Yu (2007). Scale-up economic analysis for 1,500 MT PHA/Year from a mini cellulosic ethanol biorefinery. *A project report to EGI Technologies LLC, Iowa*, Pp 1-18.

6) Jian Yu (2007). Innovative PHA technology for biorefinery. *A project report to EGI Technologies LLC, Iowa*, Pp1-30.

7) Jian Yu (2006). A mini-bioreactor for production of bioplastics from food scraps. A p*roject report to I-PHA Biopolymers Ltd. Hong Kong*, Pp 1-32.

8) Jian Yu (2004). Pilot plant and bioreactors design for production of bioplastic materials from food scraps. *A project report to I-PHA Biopolymers Ltd. Hong Kong,* Pp 1-27.

VII Course Teaching at UHM

1) **Bioprocess Design and Analysis** (Fall 2010, Fall 2012). An elective course for senior and graduate students of biological engineering program.

2) **Bioproducts and Bioprocess Design** (Spring 2009). An elective course for senior and graduate students of bioengineering program. Computer software (SuperPro Designer) was first time used in teaching bioprocess engineering.

3) **Transport Phenomena** (Fall 2005). A required course for undergraduate students of bioengineering program.

4) **Environmental Biotechnology** (Spring 2003). An elective course for undergraduate students of bioengineering program. The course teaching was shared with a faculty of the Department of Molecular Bioscience and Bioengineering.

5) **Biological treatment** (Spring 2003). A graduate course of bioengineering program. The course teaching was shared with a faculty of the Department of Molecular Bioscience and Bioengineering.

6) **Marine Bioprocess Engineering** (Spring 2002). A course developed for graduate students enrolled in the educational program of the NSF Marine Bioproducts Engineering Center at the University of Hawaii.