

阎金勇简历

基本信息

姓名：阎金勇

出生年月：1979-10

性别：男

学历：博士

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教育背景

- ◆2000-9~2004-6, 长江大学, 本科, 生物工程专业
- ◆2004-9~2007-3, 华中科技大学, 硕士, 微生物学专业
- ◆2007-3~2010-9, 华中科技大学, 博士, 生物化学与分子生物学专业, 具体从事产脂肪酶微生物的筛选, 脂肪酶基因的克隆和高效基因工程菌的构建, 新型脂肪酶催化剂的创制, 新型脂肪酶催化剂在多不饱和脂肪酸和生物柴油催化中的应用等研究内容

工作经历

- ◆2010-11~2011-11, 新加坡国立大学化学与生物分子工程系博士后 (Research Fellow), 从事基因工程及生物催化与转化方面的研究:
 - (1) 在 *E.coli* 和酵母中表达 *Candida antarctica* 脂肪酶 B 和 *Thermomyces lanuginosus* 脂肪酶, 制备重组全细胞催化剂, 应用于生物柴油催化反应
 - (2) 在 *E.coli* 和酵母中构建烯醇还原酶, cyclohexanone monooxygenase (CHMO) 和 cyclopentanone monooxygenase (CPMO) 等 BV 单加氧酶的重组全细胞催化剂, 应用于内酯的对映体拆分反应
- ◆2012-3~至今, 中国科学院青岛生物能源与过程研究所 (“青年千人计划” 团队三级项目负责人), 助理研究员, 从事液体燃料合成生物学与海洋生物酶工程方面的研究:
 - (1) 利用基因工程/代谢工程等合成生物学技术构建先进液体燃料生物合成途径
 - (2) 海洋微生物酶资源开发及催化应用, 包括海洋酶高产工程菌构建和海洋酶生物催化与转化

发表学术论文

1. **Jinyong Yan***, Yi Liu, Cong Wang, Bingnan Han, Shengying Li*. Assembly of lipase and P450 fatty acid decarboxylase to constitute a novel biosynthetic pathway for production of 1-alkene from renewable triglycerides and oils. **Biotechnology for Biofuels**, 2015, 8, 34 (DOI 10.1186/s13068-015-0219-x, IF=6.22)
2. **Jinyong Yan***, Lei Du, Xianliang Zheng, Shengying Li*. Integrated lipase production and *in situ* biodiesel synthesis in a recombinant *Pichia pastoris* yeast: an efficient dual biocatalytic system composed of cell free enzymes and whole cell catalysts. **Biotechnology for Biofuels**, 2014, 7: 55-62 (IF=6.22)
3. **Jinyong Yan***, Xianliang Zheng, Shengying Li*. A novel and robust recombinant *Pichia pastoris* yeast whole cell biocatalyst with intracellular overexpression of a *Thermomyces lanuginosus* lipase: Preparation, characterization and application in biodiesel production. **Bioresource Technology**, 2014, 151: 43-48 (IF=5.04)
4. **Jinyong Yan**, Aitao Li, Yi Xu, Thao P. N. Ngo, Szechao Phua, Zhi Li*. Efficient production of biodiesel from waste grease: One-pot esterification and transesterification with tandem lipases. **Bioresource Technology**, 2012, 123: 332-337 (IF=4.9)
5. **Jinyong Yan**, Yunjun Yan*, Sanxiong Liu, Jiang Hu, Guilong Wang. Preparation of cross-linked protein-coated micro-crystals for biodiesel production from waste cooking oil. **Bioresource Technology**, 2011, 102: 4755-4758 (IF=4.3)
6. **Jinyong Yan**, Sanxiong Liu, Jiang Hu, Guilong Wang, Yunjun Yan*. Enzymatic enrichment of polyunsaturated fatty acids using novel lipase preparations modified by combination of immobilization and fish oil treatment. **Bioresource Technology**, 2011, 102: 7154-7158 (IF=4.3)
7. **Jinyong Yan**, Xiaohua Gui, Guilong Wang, Yunjun Yan*. Improving stability and activity of cross-linked enzyme aggregates based on polyethylenimine in hydrolysis of fish oil for enrichment of polyunsaturated fatty acids. **Applied Biochemistry and Biotechnology**, 2012, 166: 925-932 (IF=1.8)
8. **Jinyong Yan**, Yunjun Yan*. Optimization for producing cell-bound lipase from

Geotrichum sp. and synthesis of methyl oleate in microaqueous solvent. **Applied Microbiology and Biotechnology**, 2008, 78: 431-439 (IF=2.569)

9. **Jinyong Yan**, Jiangke Yang, Li Xu, Yunjun Yan*. Gene cloning, overexpression and characterization of a novel organic solvent tolerant and thermostable lipase from *Galactomyces geotrichum* Y05. **Journal of Molecular Catalysis B-Enzymatic**, 2007, 49: 28-35 (IF=2.015)

10. **Jinyong Yan***, Lifan Li, Qianli Tang. Preparation of a crosslinked bioimprinted lipase for enrichment of polyunsaturated fatty acids from fish processing waste. **Applied Biochemistry and Biotechnology**, 2010, 162:757-765 (IF=1.8)

11. **Jinyong Yan**, Jiangke Yang, Li Xu, Yun Liu, Yunjun Yan*. Combined strategy for preparation of a bioimprinted *Geotrichum* sp. lipase biocatalyst effective in non-aqueous media. **Process Biochemistry**, 2009, 44: 1128-1132 (IF=2.414)

12. Aitao Li, Thao P. N. Ngo, **Jinyong Yan**, Kaiyuan Tian, Zhi Li. Whole-cell based solvent-free system for one-pot production of biodiesel from waste grease. **Bioresource Technology**, 2012, 114: 725-729 (IF=4.3)

13. Wei Zhang, J. L. Fortman, Jacob C. Carlson, **Jinyong Yan**, Yi Liu, Fali Bai, Wenna Guan, Junyong Jia, Teatulohi Matainaho, David H. Sherman, and Shengying Li*. Characterization of the bafilomycin biosynthetic gene cluster from *Streptomyces lohii*. **ChemBioChem.**, 2013, 14: 301-306 (IF=3.9)

14. Wei Zhang, Yi Liu, **Jinyong Yan**, Shaona Cao, Fali Bai, Ying Yang, Shaohua Huang, Lishan Yao, Yojiro Anzai, Fumio Kato, Larissa Podust, David Sherman, Shengying Li*. New reactions and products resulting from alternative inter-actions between the P450 enzyme and redox partners. **Journal of the American Chemical Society**, 2014, 136: 3640-3646 (IF=11.44)

15. Yi Liu, Cong Wang, **Jinyong Yan**, Wei Zhang, Wenna Guan, Xuefeng Lu, Shengying Li. Hydrogen peroxide-independent production of alpha-alkenes by OleT_{JE} P450 fatty acid decarboxylase. **Biotechnology for Biofuels**, 2014, 7: 28-39 (IF=6.22)

16. 阎金勇, 杨江科, 徐莉, 闫云君. 白地霉Y162脂肪酶基因克隆及其在毕赤酵母中的高效表达. **微生物学报**, 2008, 48(2): 184-190

17. 阎金勇, 闫云君. 微生物脂肪酶资源挖掘及其催化性能改良策略. 微生物学报, 2008, 48 (9): 1276-1281
18. 阎金勇, 丁双, 杨江科, 闫云君. 微生物酶分离纯化研究进展. 现代化工, 2007, 27 (6): 19-23
19. 阎金勇, 闫云君. 微生物脂肪酶的重组表达. 中国生物工程杂志, 2008, 28 (5): 135-139
20. 阎金勇, 闫云君. 潜力工业催化剂-白地霉脂肪酶. 食品与发酵工业, 2008, 34(5): 128-133
21. 阎金勇, 闫云君. 非水相酶催化作用. 生命的化学, 2008, 28(3): 268-271
22. 阎金勇, 杨江科, 闫云君. 单因子-响应面法优化白地霉Y162产脂肪酶条件. 中国生物工程杂志, 2007, 27(8): 69-75
23. 阎金勇, 杨江科, 闫云君. *Galactomyces geotrichum* Y25产脂肪酶条件的优化. 生物加工过程, 2007, 5(2): 46-51
24. 尹利, 阎金勇, 杨江科, 闫云君. 响应面法优化洋葱假单胞菌产脂肪酶液体发酵工艺. 微生物学杂志, 2007, 27(3): 11-15

Under review or preparing papers:

1. **Jinyong Yan*** et al. Harnessing the biodiesel producing microbes: from genetic engineering of lipase to metabolic engineering of fatty acid biosynthetic pathway. **Energy and Environmental Science** (IF=15.49, under review)
2. **Jinyong Yan*** et al. Scaffold based self-assembly of lipase and P450 fatty acid decarboxylase to improve of 1-alkene production. **Energy and Environmental Science** (IF=15.49, preparing)
3. **Jinyong Yan*** et al. A promising feed marine *Yarrowia lipolytica* yeast: homologous overexpression of feed enzyme lipase and simultaneous production of single cell protein. **Bioresource Technology**, (IF=5.04, preparing)

授权国际 PCT 专利

Zhi Li, Ngo. Nguyen phuong Thao, Wen Wang, Zillillah, Guowei Tan, Aitao Li, **Jinyong Yan**. Method of converting waste grease containing high content of free

fatty acids to fatty acid esters and catalysts for use in said method. (International Publication Number: WO 2013/048346 A1)

国家发明专利

1. 阎金勇, 李盛英. 一种利用偶联生产脂肪酶的方式催化生产生物柴油的方法 (申请号 201410138507.3)
2. 阎金勇, 蒋永强, 钟志健, 卢汉浪, 吕军, 潘勤春, 甘敏鑫. 毕赤酵母全细胞脂肪酶催化制备生物柴油的方法 (申请号 201310585029.6)
3. 阎金勇, 李盛英. 一种基于脂肪酶与 P450 脂肪酸脱羧酶偶联催化的脂肪烯烃催化合成的方法 (申请号 2015100034515)

书籍著作

作为编委, 负责《生物技术在海洋生物资源开发中的应用》书籍中“**基因表达技术**”章节的编写 (主编: 王梁华, 焦炳华; 科学出版社, 出版中)

国际会议

1. **Jinyong Yan**, Thao P. N. Ngo, Aitao Li, Zhi Li. Alternative Aviation Fuel in Asia Conference & ASEAN Algae Biofuel Initiative Conference (February 15-16, 2012, Singapore): Enzymatic Transformation of Waste Grease into Biodiesel.
2. **Jinyong Yan**, Xianliang Zheng, Shengying Li. 4th International Conference on Biorefinery towards Bioenergy 2013 (December 3-5, 2013, Xiamen, China). A novel and robust recombinant *Pichia pastoris* yeast whole cell biocatalyst with intracellular overexpression of a *Thermomyces lanuginosus* lipase: Preparation, characterization and application in biodiesel production.

科研项目

- ◆2013-2016年, 以课题副组长身份共同主持863“海洋生物功能蛋白高效发掘与产品开发”项目中的课题“饲料用海洋脂肪酶—单细胞蛋白联产关键技术及产品”(2014AA093510)
- ◆2014-2016年, 主持青岛市应用基础研究计划项目“饲料用海洋脂肪酶高效表达与单细胞蛋白生产偶联关键技术”(14-2-4-10-jch)
- ◆2014-2015年, 主持中科院创新基金项目“脂肪酶—P450脱羧酶偶联细胞原位

催化体系高效转化甘油酯生成脂肪烯烃的研究” (Y37203410U)

◆2014-2015年，主持青岛市留学人员科技与创业资助项目“基于脂肪酶与P450脱羧酶偶联催化的脂肪烯烃催化合成新途径构建”(Y32401110U)

2006-9~2011-11，参与如下项目：

◆新加坡 Alpha Biofuels (S) Pte Ltd 项目：Development of enzymatic method for biodiesel production from waste grease

◆新加坡 A-Star 项目：Enantioselective conversions of cyclopentenones to delta lactones via reductase/Bayer-Villiger monooxygenase

◆国家 863 重点项目—工业酶的分子改造和工程化技术 (2006AA020203)

◆国家 863 项目—生物柴油新型脂肪酶及催化工艺研究 (2007AA05Z417)

◆国家 863 重点项目—植物油脂绿色转化关键技术及产品 (2007AA100703)

审稿经历

受 Advanced Synthesis & Catalysis, Process Biochemistry, Biochemical Engineering Journal, Journal of Hazardous Materials, Applied Biochemistry and Biotechnology, Journal of Basic Microbiology, Fuel, Acta Biochimica et Biophysica Sinica 等 SCI 期刊邀请作为 peer reviewer。