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教育和工作经历

2017.10—至今	清华大学化工系	助理教授 (特别研究员)
2015.10-2017.9	美国麻省理工化工系	博士后 (Klavs F. Jensen组)
2014.9-2015.9	清华大学化工系	博士后
2009.9-2014.7	清华大学化工系 化学工程与技术	博士
2005.9-2009.7	清华大学化工系 化学工程与工业生物	本科

研究方向

1. 微反应器内有机合成, 化学品的连续合成

针对贝克曼重排、硝化、烷基化、氧化等快速强放热反应, 利用微反应平台, 研究这类反应的动力学和机理, 开发实现该类过程的微化工设备和工艺。

2. 微填充床用于加氢、氧化等

针对医药中间体和精细化工等行业, 基于微填充床技术, 研究微填充床内气液流动、传质和反应过程, 研究新型填充材料和催化剂负载新技术, 开发基于微填充床技术的新工艺和新设备。

3. 流动化学

面向原料药合成行业, 针对加氢、偶联反应、傅克烷基化、光化学反应和超低温反应等典型过程, 开发绿色的连续合成新技术, 开发新型智能全自动化学合成系统。

4. 基于微器件的在线表征和分析技术

面向化学、化工和生物等领域, 基于微器件混合高效、传质传热效率高、物料消耗少和安全可靠等特点, 开发基于微反应器和微器件的在线表征和分析技术, 比如在线测定反应热和反应动力学, 快速测定气/液体体系的溶解度、扩散系数和反应动力学, 测定酶催化动力学等。

项目课题

1. 横向课题 20182000135 安息香氧化的微反应器技术研究 2017.12.6-2018.12.31
2. 横向课题 2017001693 微型加氢反应系统及工艺设计 2017.12.16-2021.12.31
3. 国家自然科学基金青年基金项目, 21506110 有机催化体系内贝克曼重排反应的微型化研究 2016.1-2018.12
4. 博士后科学基金面试资助, 2015M570111 微反应器内有机酸催化的环己酮肟贝克曼重排反应研究

学术荣誉与奖励

1. 清华大学优秀博士论文 2014
2. 北京市优秀毕业生 2014
3. 北京高校优秀辅导员 2014
4. 教育部博士研究生学术新人奖 2012
5. 清华大学优秀毕业生, 北京市三好学生 2009

论文

Google Scholar <https://scholar.google.com.hk/citations?hl=zh-CN&user=f4m75noAAAAJ>

1. **Zhang JS**, Teixeira AR, Jensen KF*. Automated measurements of gas-liquid mass transfer in micropacked bed reactors. *AIChE*

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- Li LL, **Zhang JS**, Du CC, Luo GS*. Process Intensification of Sulfuric Acid Alkylation Using a Microstructured Chemical System. *Industrial & Engineering Chemistry Research*. 2018;57(10):3523-3529.
 - Du CC, **Zhang JS**, Luo GS*. Organocatalyzed Beckmann rearrangement of cyclohexanone oxime in a microreactor: Kinetic model and product inhibition. *AIChE Journal*. 2018;64(2):571-577.
 - Zhang JS**, Teixeira AR, Zhang H, Jensen KF*. Automated in Situ Measurement of Gas Solubility in Liquids with a Simple Tube-in-Tube Reactor. *Anal Chem*. 2017;89(16):8524-8530
 - Zhang JS**, Teixeira AR, Kögl LT, Yang L, Jensen KF*. Hydrodynamics of gas-liquid flow in micropacked beds: Pressure drop, liquid holdup, and two-phase model. *AIChE Journal*. 2017;63(10):4694-4704
 - Navarro-Brull FJ, Teixeira AR, **Zhang JS**, Gómez R, Jensen KF*. Reduction of Dispersion in Ultrasonically-Enhanced Micropacked Beds. *Industrial & Engineering Chemistry Research*. 2017;57(1):122-128.
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 - Lin X, Yan S, Zhou B, Wang K, **Zhang JS**, Luo GS*. Highly efficient synthesis of polyvinyl butyral (PVB) using a membrane dispersion microreactor system and recycling reaction technology. *Green Chem*. 2017;19(9):2155-2163.
 - Zhang JS**, Wang K, Teixeira AR, Jensen KF, Luo GS* Design and Scaling up of Microchemical Systems: A Review. *Annual Review of Chemical and Biomolecular Engineering*. 2017; 8:285-305.
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 - Zhang JS**, Zhang CY, Liu GT, Luo GS*. Measuring enthalpy of fast exothermal reaction with infrared thermography in a microreactor. *Chemical Engineering Journal*, 2016, 295: 384-390.
 - Zhang CY, **Zhang JS**, Luo GS*. Kinetic study and intensification of acetyl guaiacol nitration with nitric acid—acetic acid system in a microreactor. *Journal of Flow Chemistry*, 2016: 1-6.
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 - Lin XY, **Zhang JS**, Wang K, Luo GS*. Determination of micromixing scale in a microdevice by numerical simulation and experiments. *Chemical Engineering Technology*, 2016, 39: 909-917.
 - Li LT, **Zhang JS**, Wang K, Xu JH, Luo GS*. Droplet formation of H₂SO₄/alkane system in a T-junction microchannel: gravity effect. *AIChE Journal*, 2016;62(12):4564-4573.
 - Li LT, **Zhang JS**, Shen C, Wang YJ, Luo GS*. Oxidative desulfurization of model fuels with pure nano-TiO₂ as catalyst directly without UV irradiation. *Fuel*, 2016, 167: 9-16.
 - Zhang JS**, Dong C, Du CC, Luo GS*. Organocatalyzed Beckmann rearrangement of cyclohexanone oxime in a microchemical system. *Organic Process Research & Development*, 2015, 19: 352-356.
 - Wang PJ, Wang K, **Zhang JS**, Luo GS*. Non-aqueous suspension polycondensation in NMP-CaCl₂/paraffin system-A new approach for the preparation of poly (p-phenylene terephthalamide). *Chinese Journal of Polymer Science*. 2015, 33(4):564-575.
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 - Zhang JS**, Riaud A, Wang K, Lu YC, Luo GS*. Beckmann rearrangement of cyclohexanone oxime to ϵ -caprolactam in a modified catalytic system of trifluoroacetic acid. *Catalysis Letter*, 2014, 144(1):151-157.
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 - Zhang JS**, Lu YC, Wang K, Luo GS*. Novel One-Step Synthesis Process from Cyclohexanone to Caprolactam in Trifluoroacetic Acid. *Industrial & Engineering Chemistry Research*, 2013, 52: 6377-6381.
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 - Zhang JS**, Wang K, Lu YC, Luo GS* Beckmann rearrangement in a microstructured chemical system for the preparation of ϵ -caprolactam. *AIChE Journal*, 2012, 58: 925-931.
 - Zhang JS**, Lu YC *, Jin QR, Wang K., Luo GS*. Determination of kinetic parameters of dehydrochlorination of dichloropropanol in a microreactor. *Chemical Engineering Journal*, 2012, 203:142-147.
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 - Tan J, **Zhang JS**, Lu YC, Xu JH, Luo GS*. Process intensification of catalytic hydrogenation of ethylanthraquinone with gas-liquid microdispersion. *AIChE Journal*, 2012, 58: 1326-1335.
 - Zhang JS**, Wang K, Lu YC, Luo GS*. Characterization and modeling of micromixing performance in micropore dispersion reactors. *Chemical Engineering and Processing: Process Intensification*, 2010, 49: 740-747.

专利:

- 骆广生, 李莲荣, 张吉松, 王凯, 一种混合酸催化体系及在生产烷基化汽油中的应用 2017.6.13, 中国, CN201710093577.5
- 骆广生, 杜晨灿, 张吉松, 一种用于酮肟贝克曼重排反应的混合酸催化体系, 2017.4.24, 中国, CN201710270180.9
- 骆广生, 李莲荣, 张吉松, 王凯, 一种硫酸催化复合物及在生产烷基化汽油中的应用, 2016.7.7, 中国, CN201610533932.1
- 骆广生, 董晨, 王凯, 张吉松, 一种微反应器合成环己酮肟的系统和方法, 2015.7.6, 中国, CN201510391668.8

5. 骆广生 ;张吉松 ;吕阳成;王凯,一种由环己酮直接合成己内酰胺的方法2012.10.9, 中国, CN201210380153.4
6. 张吉松 ;骆广生;吕阳成;王凯,一种用于酮肟贝克曼重排反应的催化体系2012.10.9, 中国, CN201210380145.X
7. 骆广生 ;张吉松 ;吕阳成;王凯;姜育田,一种氯丙烯氯醇化的微反应系统及方法 ,2012.2.7, 中国, CN201210025302.5
8. 吕阳成 ;张吉松;王凯;骆广生;姜育田,在微反应器中用二氯丙醇环化制备环氧氯丙烷的方法 ,2012.2.7, 中国
N201210025400.9
9. 张吉松;王凯;吕阳成;骆广生,一种多段重排由环己酮肟制备己内酰胺的系统及方法 ,2011.5.6, 中国, CN201110117090.9
10. 骆广生;张吉松;王凯;吕阳成,一种由环己酮肟制备己内酰胺的贝克曼重排新方法 ,2010.7.9, 中国, CN201010224892.5