郭勇

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个人简介

从事生物质资源利用和氢能利用中的催化转化研究，主要贡献包括：
（1）发展 Nb 基催化剂活性位调控策略，实现生物质中 C-O 键高效活化；
（2）揭示 Nb 基催化剂中 NbOx 物种的独特性能，实现生物质或废弃塑料中 C-C 键高效解离；
（3）发展调控金属和载体间的相互作用策略，促进生物质中 O-H 键及水的活化，提高产氢效率，实现生物质中碳氢资源的耦合利用。
以第一/通讯作者在 Acc. Chem. Res.，Chem，ACS Catal.， J. Catal.，Appl. Catal. B Environ. 等化学或催化期刊发表论文 26 篇，SCI 他引 1368 次，3 篇高被引论文；申请中国发明专利 40 余项，授权 22 项；撰写英文专著（章节）一部；2017 年获闵恩泽能源化工奖（青年进步奖），2019 年获上海市自然科学二等奖（排名第 2）和教育部自然科学二等奖（排名第 4）。主持国家自然科学基金青年基金项目和面上项目。

研究方向

多相催化

研究成果及主要发表文章

1) Guo Yong, Wang Yanqin, Lignin Upgrading in《Heterogeneous Catalysis for Sustainable Energy》, Wiley-VCH
2) Guo Yong, Jing Yaxuan, Xia Qineng*, Wang, Yanqin*., NbOx -Based Catalysts for the Activation of C–O and C–C Bonds in the Valorization of Waste Carbon Resources. Acc. Chem. Res. 2022, 55 (9)
3) Dong Lin, Lin Longfei, Han Xue, Si Xiaoqin, Liu Xiaohui, Guo Yong*, Lu Fang, Rudić Svemir, Parker Stewart F, Yang Sihai*, Wang Yanqin*. Breaking the limit of lignin monomer production via cleavage of interunit carbon-carbon linkages. Chem. 2019, 5, 1521-1536.
4) Jing Yaxuan, Guo Yong, Xia Qineng, Liu Xiaohui, Wang Yanqin, Catalytic Production of Value-Added Chemicals and Liquid Fuels from Lignocellulosic Biomass. Chem 2019, 5 (10), 2520-2546.
5) Li Didi, Li Yi, Liu Xiaohui, Guo Yong*, Pao, ChanWen, Chen JengLung, Hu Yongfeng, Wang Yangqin*, NiAl2O4 Spinel Supported Pt Catalyst: High Performance and Origin in Aqueous-Phase Reforming of Methanol. ACS Catal. 2019, 9 (10), 9671-9682.
6) Li Lingxiao, Dong Lin, Li Didi, Guo Yong*, Liu Xiaohui, Wang Yangqin*, Hydrogen-Free Production of 4-Alkylphenols from Lignin via Self-Reforming-Driven Depolymerization and Hydrogenolysis. ACS Catal. 2020, 10 (24), 15197-15206.
7) Zhou Hao, Chen Lu, GuoYong*, Liu Xiaohui, Wu Xin-Ping*, Gong Xue-Qing, and Wang Yanqin*, Hydrogenolysis Cleavage of the Csp2–Csp3 Bond over a Metal-Free NbOPO4 Catalyst. 2022, ACS Catal. doi: 10.1021/acscatal.2c0034.
8) Mao Qianlong, Guo Yong*, Liu Xiaohui, Shakouri, M., Hu Yongfeng, Wang Yanqin, Identifying the realistic catalyst for aqueous phase reforming of methanol over Pt supported by lanthanum nickel perovskite catalyst. Appl. Catal. B: Environ. 2022, 313.
9) Li Lingxiao, Dong Lin, Liu Xiaohui, Guo Yong*, Wang Yanqin*, Selective production of ethylbenzene from lignin oil over FeOx modified Ru/Nb2O5 catalyst. Appl. Catal. B: Environ 2020, 260.
10) Dong Lin, Xia Jie, Guo Yong*, Liu Xiaohui, Wang Haifeng*, Wang Yanqin, Mechanisms of Caromatic-C bonds cleavage in lignin over NbOx-supported Ru catalyst. J. Catal. 2021, 394, 94-103.
11) Xin Yu, Dong Lin, Guo Yong*, Liu Xiaohui, Hu Yongfeng, and Wang Yanqin*. Correlation of the catalytic performance with Nb2O5 surface properties in the hydrodeoxygenation of lignin model compound. J. Catal. 2019, 375, 202-212.
12) Li Jinjian, Tong Fengya, Li Yi, Liu Xiaohui, Guo Yong*, Wang Yanqin. Dehydrogenation of dodecahydro-N-ethylcarbazole over spinel supporting catalyst in a continuous flow fixed bed reactor. 2022, Fuel. doi: 10.1016/j.fuel.2022.124034
13) Yue Shenzhi, Dong Lin, Liu Xiaohui, Guo Yong*, Wang Yanqin. Hydrogenation of palmitic acid over Ni/Nb2O5-SiO2 catalyst: Synergetic effect and kinetic study. Ind. Crop Prod. 2020, 158, 113006.
14) Guo Yong, Ying Ting, Liu Xiaohui, Shi Bianfang, and Wang Yanqin*. A partially graphitic carbon catalyst for aerobic oxidation of cyclohexane. Mol. Catal. 2019, DOI: 10.1016/j.mcat.2019.110487.
15) Jing Yaxuan, Xin Yu, Guo Yong*, Liu Xiaohui, Wang Yanqin*. Highly efficient Nb2O5 catalyst for aldol condensation of biomass-derived carbonyl molecules to fuel precursors. Chin. J. Catal.,2019,40,1168-1177
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