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发布时间: 2020-09-11 15:50:14 编辑: 点击: [7042]



基本信息:

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教育经历:

2007-2013: 天津大学, 内燃机燃烧学国家重点实验室, 动力机械及工程, 工学博士

2003-2007: 大连理工大学, 能源与动力工程学院, 工学学士

工作经历:

2020.09--至今: 山东大学, 能源与动力工程学院, 教授

2013.12-2020.08: 新加坡国立大学 (National University of Singapore), 研究员 (Research Fellow)

主要研究方向:

内燃机燃烧排放的数值模拟

内燃机先进燃烧方式

实用燃料的化学反应机理

液体燃料的喷雾和雾化

工程设计中的大数据分析和人工智能

国际学术参与:

长期担任 Applied Energy, Fuel, Energy & Fuels, Combustion and Flame等SCI杂志评审人。

代表作论文:

1. K Tay, W Yang, **F Zhao***, Q Lin et al. Development of a Highly Compact and Robust Chemical Reaction Mechanism for Unsaturated Furan Oxidation in Internal Combustion Engines via a Multi-objective Genetic Algorithm and Generalized Polynomial Chaos. Energy Fuels 2020,34:936-948.
2. S W, K Tay, W Yu, Q Lin, H Li, **F Zhao***, W Yang*. Development of a highly compact and robust chemical reaction mechanism for the oxidation of tetrahydrofurans under engine relevant conditions. Fuel 2020, 276,118034.
3. W Yu, Y Zong, Q Lin, K Tay, **F Zhao***, W Yang*, M Kraft. Experimental study on engine combustion and particle size distributions fueled with Jet A-1. Fuel 2020, 263:116747.
4. W Yu, **F Zhao***. Formulating of model-based surrogates of jet fuel and diesel fuel by an intelligent methodology with uncertainties analysis. Fuel 2020, 268,117393.
5. W Yu, **F Zhao***, W Yang*, H Xu. Integrated analysis of CFD simulation data with K-means clustering algorithm for soot formation under varied combustion conditions. Applied Thermal Engineering 2019,153:299-305.
6. W Yu, K Tay,**F Zhao***, W Yang* et al. Development of a new jet fuel surrogate and its associated reaction mechanism coupled with a multistep soot model for diesel engine combustion. Applied Energy 2018, 228: 42-56.
7. W Yu, **F Zhao***, W Yang*, K Tay, H Xu. Development of an optimization methodology for formulating both jet fuel and diesel fuel surrogates and their associated skeletal oxidation mechanisms. Fuel 2018, 231: 361-372.

8. **F Zhao**, W Yang*, W Yu et al. Numerical study of soot particles from low temperature combustion of engine fueled with diesel fuel and unsaturation biodiesel fuels. *Applied Energy* 2018, 211:187-193.
9. **F Zhao**, W Yang*, D Zhou et al. Numerical modelling of soot formation and oxidation using phenomenological soot modelling approach in a dual-fueled compression ignition engine. *Fuel* 2017, 188:382-389
10. **F Zhao**, W Su*, W Yu. Sensitivity study of engine soot forming using detailed soot modelling oriented in soot surface growth dynamic. *Fuel* 2016, 168:81-90.
11. **F Zhao**, W Yang*, W Tan et al. Power management of vessel propulsion system for thrust efficiency and emissions mitigation. *Applied Energy* 2016, 161:124-132.
12. **F Zhao**, W Yu, Y Pei, W Su*. Effects of mixture inhomogeneity and combustion temperature on soot surface activity and soot formation in diesel engines. *Science China Technological Sciences* 2014, 57(3): 452-460.
13. **F Zhao**, W Yu, Y Pei, W Su*. Influence factor of diesel soot formation in diesel engine combustion predicted by multistep soot model with highlight in soot surface activity. *Chinese Science Bulletin* 2014, 59(11):1176-1186.
14. W Yu, W Yang*, K Tay, **F Zhao**. An optimization method for formulating model-based jet fuel surrogate by emulating physical, gas phase chemical properties and threshold sooting index (TSI) of real jet fuel under engine relevant conditions. *Combustion and Flame* 2018, 193:192-217.
15. W Yu, W Yang*, K Tay, **F Zhao**. Development of a new skeletal mechanism for decalin oxidation under engine relevant conditions. *Fuel* 2018, 212: 41-48.
16. **赵霏阳**, 于文斌, 裴毅强, 苏万华*. 柴油机高密度-低温燃烧过程参数对碳烟生成影响的模拟。 *内燃机学报*, 2014, 32 (3) : 193-201.

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