

Jinguo Sun

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➤ EDUCATION

2022.09 – now	Division of Combustion Physics, Lund University
Post-doc researcher	<u>Advisor: Prof. Andreas Ehn</u>
2017.09 – 2022.07	Department of Energy and Power Engineering,
Ph.D. candidate	Tsinghua University
	<u>Supervisor: Prof. Shuiqing Li</u>
2019.12-2020.12	Institute for Combustion Technology, RWTH Aachen,
Visiting scholar	Germany
	<u>Supervisor: Prof. Heinz Pitsch</u>
2013.09 – 2017.07	Department of Energy and Power Engineering,
B.E.	Tsinghua University, Beijing, China

➤ RESEARCH INTERESTS

- Plasma-assisted combustion in methane and ammonia flames (numerical and experimental)
- Combustion instability; swirl flames dynamics; large-eddy simulation of turbulent reacting flows
- Electric field/Plasma-flame interaction modelling
- Advanced laser diagnostics

➤ PUBLICATIONS

• *Published*

1. **Jinguo Sun**, Yong Tang, Shuiqing Li*. Plasma-assisted stabilization of premixed swirl flames by gliding arc discharges. *Proceedings of the Combustion Institute* 38.4 (2021): 6733-6741.
2. **Jinguo Sun**, Yihua Ren, Yong Tang, Shuiqing Li*. Influences of heat flux on extinction characteristics of steady/unsteady premixed stagnation flames. *Proceedings of the Combustion Institute*, 38.2 (2022):2305-14.
3. **Jinguo Sun**, Wei Cui, Yong Tang, Chengdong Kong, Shuiqing Li*. Inlet pulsation-induced extinction and plasma-assisted stabilization of premixed swirl flames. *Fuel* 328 (2022): 125372.
4. **Jinguo Sun**, Qian Huang, Yong Tang, Shuiqing Li*. Stabilization and Emission Characteristics of Gliding Arc-Assisted NH₃/CH₄/Air Premixed Flames in a Swirl Combustor. *Energy & Fuels* 36.15 (2022): 8520-8527.
5. **Jinguo Sun**, Hu Wu, Yong Tang, Chengdong Kong, Shuiqing Li*. Blowout Dynamics and Plasma-Assisted Stabilization of Premixed Swirl Flames under Fuel Pulsations. *Application in Energy and Combustion Science*, 14 (2023): 100122.

6. Yong Tang, **Jinguo Sun**, Baolu Shi, Shuiqing Li, Qiang Yao*. Extension of flammability and stability limits of swirling premixed flames by AC powered gliding arc discharges. *Combustion and Flame* 231 (2021): 111483.
7. Yuanping Yang, Qian Huang, **Jinguo Sun**, Peng Ma, Shuiqing Li*. Reducing NO_x emission of swirl-stabilized ammonia/methane/air tubular flames through fuel-oxidizer mixing strategy. *Energy & Fuels*, 36.4 (2022): 2277-2287.
8. **Jinguo Sun**, Wei Cui, Shuiqing Li*. Large-eddy simulation of premixed swirl flame dynamics under pulsating flow disturbances, *12th Asia-Pacific Conference on Combustion*, Fukuoka, Japan, 2019.
9. Hu Wu, **Jinguo Sun**, Shaolong Li, Yong Tang, Wei cui, Shuiqing Li*. Plasma-assisted stabilization of premixed swirl flames under flow pulsations, *13th Asia-Pacific Conference on Combustion*, Abu Dhabi, United Arab Emirates, 2021.
10. **Jinguo Sun**, Yupan Bao, Jonas Ravelid, Andreas Ehn*. Emission Spectroscopy of Nanosecond Pulsed Plasma Discharges in Ammonia/Air Flames. (Accepted, *25th International Symposium on Plasma Chemistry*, Kyoto, Japan, 2023)
- *In submission*

➤ PROJECT EXPERIENCE

LAPLAS: Advanced Laser Diagnostics for Discharge Plasma

2022.09-now *European Research Council (ERC)* 852394

- Served as a main researcher on plasma-assisted ammonia combustion.

Electrical and Plasma Assisted Combustion Instability Control for Jet Engine under extreme conditions.

2017.01-2020.12. *National Natural Science Funds of China*. 91641204

- Participate in writing proposal and completion report; Served as a main researcher.
- Study swirl flame dynamics and plasma-flame interactions through numerical and experimental techniques.

➤ ORAL PRESENTATIONS (International)

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| • 25 th International Symposium on Plasma Chemistry | 2023.05 | Kyoto, Japan |
| • 13 th Asia-Pacific Conference on Combustion | 2021.12 | Abu Dhabi, UAE |
| • 38 th International Combustion Symposium
(one presentation for <u>Laminar colloquium</u> and the other for <u>New concept colloquium</u>) | 2020.01 | Adelaide, Australia. |
| • 17 th International Conference on Numerical Combustion | 2018.05 | Aachen, Germany |
| • 13 th Asia-Pacific Conference on Combustion | 2017.07 | Fukuoka, Japan |