Kwah, Yi Hao

Singaporean | Trondheim, Norway

yh.kwah@gmail.com | +47 92 52 93 92 | yi-hao-kwah | 21 Feb 1991

PERSONAL STATEMENT

"Curious to explore the unknown and challenge the limits in a multi-disciplinary work environment through commitment and cooperation."

INTERESTS

Sports
swimming, hiking, nordic skiing

Hobbies
photography, baking, Go (board game)

SKILLS

IT tools:

Matlab | Python | C (basic) | Git | LabView | CAD | ANSYS Fluent (basic) | MS Office | Video editing | LaTeX

Knowledge

Statistical analysis | CFD | Fluid mechanics | Combustion | Electronics | Basic mechanical design | Optical diagnostics | Data visualisation | Signal processing | Turbulence

LANGUAGES

English and Mandarin Chinese (bilingual)

French (professional proficiency)

Norwegian (learning in progress)

REFEREES

Prof. James Dawson
(PhD supervisor)
NTNU, Norway
james.r.dawson@ntnu.no

Prof. Nicholas Worth
(Lab coordinator)
NTNU, Norway
nicholas.a.worth@ntnu.no

Dr. Samuel Wiseman
(Co-worker)
SINTEF Energi AS, Norway
samuel.wiseman@sintef.no

RESEARCH EXPERIENCE

PhD, Marie Curie Fellow (Norway)

Norwegian University of Science and Technology, NTNU

Aug 2018 – Apr 2023 (thesis submitted) | Norway

- PhD candidate under the ANNULIGhT Marie Skłodowska-Curie European project.
- Designed and built two lab-scale versions of an industrial engine (in collaboration with SAFRAN Helicopter Engines) for flame ignition and stability investigation.
- Investigated the impact of carbon-free fuel (ammonia and hydrogen) during engine transient operation in a laboratory setting.
- Conceptualised and implemented novel data processing and visualisation methods to analyse actual engine data for SAFRAN.
- Custom built an electronic control box to independently control photo-multipliers, enhancing data acquisition reliability, and realising cost savings of > 50,000 kr.
- A three-minute video summary of my PhD work: **PhD work in 3 minutes**.

PUBLICATIONS

- Kwah, Y. H., Wiseman, S., & Dawson, J. (n.d.). The effect of methane-ammonia and methane-hydrogen blends on ignition and light-around in an annular combustor. *Journal of Engineering for Gas Turbines and Power (accepted and nominated for Best Paper Award)*.
- Kwah, Y. H., Agostinelli, P. W., Richard, S., Exilard, G., Pascaud, S., Gicquel, L. Y., & Dawson, J. (2022). Effect of Strong Azimuthal Swirl On Ignition and Light-Around in an Annular Combustor. *Journal of Engineering for Gas Turbines and Power*. doi:10.1115/1.4055459
- Mazur, M., Kwah, Y. H., Indlekofer, T., Dawson, J. R., & Worth, N. A. (2021). Self-excited longitudinal and azimuthal modes in a pressurised annular combustor. *Proceedings of the Combustion Institute*, *38*(4), 5997–6004. doi:10.1016/j.proci.2020.05.033
- Walter Agostinelli, P., Kwah, Y. H., Richard, S., Exilard, G., Dawson, J. R., Gicquel, L., & Poinsot, T. (2020). Numerical and Experimental Flame Stabilization Analysis in the New Spinning Combustion Technology Framework. In *Volume 4A: Combustion, Fuels, and Emissions* (V04AT04A058). doi:10.1115/GT2020-15035

EDUCATION AND MILITARY SERVICE

MEng, Mechanical Engineering (Singapore)

National University of Singapore, NUS

Aug 2017 – July 2018 | Singapore

- Research work in NUS: numerical optimisation of heat transfer performance in cooling channels performed using ANSYS Fluent and Matlab.

Dipl Ing (France)
BEng (Hons), Mechanical engineering (Singapore)

CentraleSupélec (formerly Ecole Centrale Paris, ECP) &
National University of Singapore, NUS

Aug 2012 – June 2017 | France-Singapore

- Double degree programme between NUS and ECP.
- Bachelor with Second Upper Class Honours (Cumulative grade: 4.3 out of 5) in NUS, postgraduate engineering degree (Diplôme d'Ingénieur) in ECP.
- > 90% of coursework in ECP taken in french, and participated in semester-long feasibility study on urban public transport in Paris with Eiffage Métal.

Military service

Singapore Armed Forces

Jan 2010 – Jan 2012 | Singapore

- Assistant to chief clerk in overseeing the logistical and administrative matters of a battalion to ensure smooth daily operations.