

**DEPARTMENT OF MECHANICAL ENGINEERING****SEMINAR****Online**

Title: Experiments and CFD simulations of protective facemask-inclusive human thermal stress

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Date: 28 April, 2022 (Thursday)

Time: 3:00 p.m. (Hong Kong Time)

Zoom meeting: 1) Link to join the meeting:

<https://hku.zoom.us/j/98135303067?pwd=NUppMUZUM0p6WUVZS2tsR0JaWUpXQT09>

2) Meeting ID: 981 3530 3067

3) Password: 778423

Abstract:

During the COVID-19 pandemic, people are facing dual challenges from infection risks and extra heat and breathing burdens with the use of protective facemasks (PFMs). To evaluate the PFM-induced heat stress, the study aims to study the mechanisms of heat exchanges between human and environment under the intervention of PFMs via both experiments and computational fluid dynamics (CFD) simulations. In the experimental phase, the influence of human activity intensities, and types of PFMs (flat, fold, and cup) on thermal and breathing comfort were tested. In the CFD simulation phase, simulation results were compared with experimental data for validation and model sensitivity analyses were conducted to assess the impact of different factors (e.g., exhale temperature, exhale frequency, blood temperature, mask resistance, etc.) on facial thermal stress induced by PFMs. In this seminar, our up-to-date knowledge about all the major factors influencing PFM-induced thermal stress will be discussed.

ALL INTERESTED ARE WELCOME

For further information, please contact Dr. J. Song at 3917 2622.

Research area: Natural & Built Environment