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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

JOINT SEMINARS ON MATHEMATICS AND MECHANICAL & AEROSPACE ENGINEERING

Speaker: **Dr. Wei CHEN**
Senior Engineer, GE (retired)

Venue: **Room 4504** (Lifts 25/26)

Date	Time	Title
9 Jan 2023 (Mon)	**10:00-11:00am**	**Heat Transfer at Speed of Sound**

Abstract

You may have learnt the physics of heat conduction and thermal conductivity in high school and college. Are you surprised if you know that heat can be conducted super-fast at the speed of sound?! Actually, it is a common phenomenon that heat is transferred at the speed of sound in nature. It is a very critical step in the cycle of life in nature. Here the phenomenon of heat transfer at the speed of sound will be presented.

In the seminar, we will learn the physics of superfluid and sonic heat transfer and how it is realized under the engineering framework. By thermodynamics, there will always exist two thermodynamic states and they are dissipative and non-dissipative states. Heat transfer at the speed of sound is one of them. The modern mechanics has been focusing on the dissipative physics and the new finding shows us that we may have overlooked the non-dissipative physics. Come to this seminar, learn the new idea and be the first one to discover a non-dissipative phenomenon around us!

9 Jan 2023 (Mon)	**11:30-12:30pm**	**Combustion Design in Turbomachinery**

Abstract

A combustor is the critical component in a turbomachine and produces thermal energy for airplanes and gas turbines. It embodies the most advanced technologies in engineering and manufacturing. Therefore, the advancement of combustion technologies reveals the level of sophistication of integration of science, engineering and industrial capabilities.

Through this seminar, we will learn the basics, processes, manufacturing, design, engineering and science from the world leading companies of combustion design. The challenges and perspectives of the future developments from engineering point of view. As a future engineer, how to best prepare ourselves and be successful in future. The seminar covers the types and functions of combustors, combustor design and testing, the state-of-art computational modeling in design, and future development.

For the career in turbomachinery, the knowledge of combustion design will be significantly important.

All are Welcome!