

Special Lecture

Organizer: Institute of Fluid Science, Tohoku University

Co-organizer: The Institute of Electrostatics Japan “Research Committee on Water Treatment by Discharge Plasma”

Schedule: Tuesday, February 22, 2022, 9:00~10:00 (JST)

Distribution Method: Webex

URL:

<https://tohokuuniversity-zdb.my.webex.com/tohokuuniversity-zdb.my/j.php?MTID=m65c758fab3ace8aff1e2e6c34122ff62>

Meeting No. (Access Code): 2511 426 3049

Meeting Password: VjUmPWjc787 (85867952: in the case of using telephone or video system)

Lecturer: James S. Cotton (Professor, Department of Mechanical Engineering, McMaster University, Canada (Visiting Professor, Institute of Fluid Science, Tohoku University, Japan))

Lecture Title: Electrohydrodynamics and its application to heat transfer and energy storage technologies

Abstract:

The seminar will introduce Electrohydrodynamics (EHD) as the next generation thermal management technology able to solve a broad range of challenges, from thermal energy harvesting and storage to advanced control of dynamic thermal management applications. The objective of this research is to develop expertise in new heat exchanger design and enhanced thermal storage solutions that incorporate EHD as the mechanism of enhancement and intelligent control. This seminar will review the development of novel high-performance heat transfer systems and thermal storage with a focus on two specific outcomes:

A) Establish EHD as a new method of active control for liquid-vapor heat exchangers and thereby provide new capabilities in thermal management system solutions.

B) Expand our leading research into EHD solid-liquid PCM thermal storage to enhance charging and discharging performance.

This study was supported by the IFS Collaborative Research Project (J21T001).

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