

## HEAT TRANSFER ACROSS INTERFACE

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JIANYING HE<sup>\*</sup>, SENBO XIAO<sup>\*</sup>

<sup>\*</sup> Department of Structural Engineering, Norwegian University of Science and Technology (NTNU)  
Richard Birkelands vei 1A, 7491 Trondheim, Norway  
[jianying.he@ntnu.no](mailto:jianying.he@ntnu.no)  
<https://www.ntnu.edu/nml>

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### ABSTRACT

According to the first law of thermodynamics, heat is the universal consequence of physical activity. The control of heat flow is central to all engineering fields. Heat conduction in low dimensional materials is currently one of the unsolved scientific challenges, especially in the case of interfaces between dissimilar materials. At the interface, bulk properties of individual materials are concealed while a distinct interface property emerges. When materials, components and devices are miniaturized to nanoscale size, their properties are governed by surface and interfaces. Thus, understanding and controlling the transfer of heat flow imposed by interfaces is of crucial importance and of great interest, for example, either to cooling applications that need for maximizing the thermal boundary conductance or to thermoelectric applications for minimizing the thermal boundary conductance.

In last decades, the research community has developed for continued advancement in heat transfer across interface and greatly contributed to modern electronics, manufacturing, transportation, and so on. The field continues to confront renewed challenges with the development of new techniques, methodology, instrumentation and applications required for sustained development. For example, the rapid pace in research capabilities at the micro- and nano-scales are yielding vast new opportunities but also significant challenges in heat transfer. Innovative techniques for computer simulations are required in synergy with increasingly sophisticated experimental techniques.

The minisymposium aims to foster knowledge of micro and nanoscale interface heat transfer through scientific presentations by top experts and young researchers, promotion of research, education and exchange of personnel for the benefit of both industry and academia. The scientists with expertise in heat transfer by computational mechanics such as molecular simulation, continuum mechanics and multiscale modeling will be invited to present their latest results and findings. The minisymposium is planned to have at least 2 sessions, with 2 keynote presentations and 8 regular presentations.