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## Advances in Heat Transfer Enhancement

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### Message from the Guest Editors

Dear Colleagues,

The importance of improving heat transfer performance is well known in the fields of industry and research. Techniques for improving heat exchange can be divided as passive or active methods. The passive methods do not require external power sources, such as special geometries, treated surfaces, extended surface (fins), rough surfaces, additives for fluid, and so on, whereas the active methods require an external power source (electrical/mechanical) to realize the advanced heat transfer mechanism, such as the stirring of the ferrofluid with an electromagnetic field, vibrating surface. New techniques to improve heat transfer have recently appeared in engineering research, as the insert of nanoparticles or porous medium, with high thermal conductivity, in working fluids to increase their effectivity thermal conductivity and convective heat transfer coefficients.

In recent years, many research activities on heat transfer have been addressed to microflow due to its new applications of microfluidic systems and components, such as biochemical cell reaction, micro electric chip cooling, channels, nozzles, diffusers, pumps, mixers, heat pipes, sensors, transducers, and actuators. The scope of this Special Issue is to examine original research papers as well as review articles on the most recent developments and research efforts on this subject.



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## Message from the Editor-in-Chief

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