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Heat Transfer Enhancement Techniques in Microscale Flows

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Message from the Guest Editor

The design of efficient cooling–heating devices is a crucial task in several applications, such as microelectronics, biotechnologies, automotive, and aerospace engineering. For example, the rapid growth of electronic technologies, together with the rapid decrease in component size, has led to a strong need for thermal packaging and management.

Unfortunately, the use of strong power density is today coupled to a lack of efficient heat dissipation methods, leading to a truly technological bottleneck. Therefore, the understanding of the transport phenomena involved in micro heat transfer and their enhancement is definitely needed to allow further miniaturization of technological steps.

The goal of this Special Issue is to collect contributions focused on recent techniques for heat transfer enhancement in microscale flows. In addition to original research papers, historical review papers are also particularly welcome.

- Microchannel heat sink;
- Microchannel heat exchanger;
- Roughness, riblets, fins;
- Surface texturing;
- Pool and flow boiling;
- Nanofluids;
- Manufacturing strategies;
- Novel sensors



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Special Issue



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Message from the Editor-in-Chief

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