Special Issue

Recent Advance and Applications in Chip Calorimetry

Message from the Guest Editors

Chip calorimeters are modern, highly miniaturized representatives of an old and very fundamental method used in physical chemistry and related sciences. They are characterized by the integration of the essential functional elements of a calorimeter, such as sensors for the measurement of temperatures and temperature differences, calibration heaters, sample containers, and heat sinks in a solid-state device, generally a silicon chip. The micro-techniques used for the preparation of the heat power transducers in chip calorimeters have led to high signal resolution and extremely small signal time constants.

This Special Issue on this area is intended to provide an overview of the current state-of-the-art, as well as the possibilities and limitations, and to encourage broader applications. Contributions presenting new results are very welcome, especially from the fields of ultrafast scanning calorimetry and bio-medical diagnostics in the broadest sense, including single-cell thermometry.

Keywords:
- ultra-fast scanning calorimetry
- phase transition
- nano-samples
- thin-films
- metabolic heat production
- metabolic drug responses
- single-cell thermometry

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Deadline for manuscript submissions

closed (20 February 2022)

Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.5

mdpi.com/si/75852

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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