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Nanocoating of Metal Surfaces: Mechanisms and Applications of Nano and Conventional Fluids for Heat Transfer Purposes

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Message from the Guest Editors

Nanofluids are a new class of cooling liquids that could use instead of traditional fluids with the aim to increase thermal properties. The formed nanostructure layer could play an important role to increase or decrease the heat transfer performance through the boiling process. Understanding and characterizing the deposition of nanolayer on the heating element is very crucial to think about the real-life applications of using nanofluids as a promising cooling liquid through the boiling phenomenon. This special issue planned to receive works including, but not limited to investigate the following issues:

- Deposition of nanomaterials during the boiling process of nanofluids.
- Studying the mechanism of nanolayer formation on the heated surface.
- Studying the Surface modification after boiling test of nanofluid and making a comparison with the smooth surface before boiling phenomenon.
- Characterization of the nano-coating layer using different techniques.
- Studying the nano-coating layer formed by electrochemical coating methods.
- Studying the heat transfer performance of nano/conventional fluids during the convection and boiling modes using nanostructured surfaces.

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Message from the Editorial Board

Now more than ever, research is called for to produce technologies and improve knowledge to solve the major challenges faced by our society. The development of new materials and devices for (without the ambition to be exhaustive) energy, health and food technology, together with the need for establishing processes that reduce the impact on critical resources and the environment, is indeed at the center of most contemporary research. Surface science and engineering play a key role in this regard. Refining surfaces and their modifications provides new materials, architectures and processes with a huge potential to aid most societal challenges. *Coatings* is a well-established, peer-reviewed, online journal that focuses on the dissemination of publications in the field of surface science and engineering. *Coatings* publishes original research articles that report cutting-edge results and review papers on the hottest topics.

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