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Analytical and Computational Fluid Dynamics of Combustion and Fires [Dedicated to Prof. Vitaly Bychkov (1968–2015) of Umea University, Sweden], Volume II

Guest Editor:

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Deadline for manuscript submissions:
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Message from the Guest Editor

Often a useful tool, but occasionally a disaster, fire has accompanied humankind for millennia. Protecting from coldness, darkness, predators, and stomach bacteria, combustion brought primitive, tribal humans into the modern industrial civilization, and it will likely remain the major provider of energy for industry, heating, and transportation in the foreseeable decades. Next-generation combustion technologies are expected to be environmentally friendly, safe, and energy-efficient, and the role of numerical methods in the design and development of such advances is emerging today.

The aim of this Special Issue is to collect recent analytical and computational advances in the fields of reacting fluids, including (but not limited to) premixed flame dynamics and morphology, turbulent burning, flame acceleration, and combustion instabilities.

This Special Issue is dedicated to the memory of Professor Vitaly Bychkov (1968–2015), whose contributions into combustion theory and modeling, with his in-depth studies of hydrodynamic combustion instabilities, flame acceleration, and deflagration-to-detonation transition, are hard to overestimate.

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Message from the Editor-in-Chief

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