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Modeling of Combustion and Fuel Reforming by Non-equilibrium Plasma

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Message from the Guest Editors

With the increasing severity of global warming and pollutant emission, the renewable energy from solar, wind and hydroenergy plays a more important role in the world energy. Non-equilibrium plasma generated from renewable electricity provides a promising technology to improve combustion efficiency, reduce emissions and store renewable energy. It has shown remarkable advantages not only in enhancing ignition, extending flammability and flame stabilization limits, accelerating low temperature fuel oxidation, but also in converting fuels and CO_2 into valuable chemicals. Numerical modeling is a helpful approach and has been frequently used to understand and illustrate the underlying physical-chemical process of plasma assisted combustion and fuel reforming, as well as developing plasma applications. The advances in computer science and computational ability also promise to help accelerate the development of modeling in combustion and plasma science.

The topics in this Special Issue include, but are not limited to, kinetic model development, multi-scale modeling, and advanced computational technology for plasma-assisted combustion and fuel reforming.

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Message from the Editor-in-Chief

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