



energies



Special Issue Reprint

Advanced Propulsion System and Thermal Management Technology

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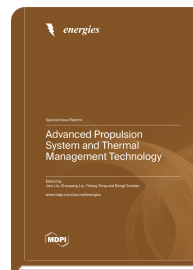
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The reprint focused on innovative developments in the fields of advanced propulsion system and thermal management technology. Propulsion systems develop along the direction of wide speed range and long endurance both for civil aircrafts and military applications. The research works of propulsion systems mainly include overall design, combustion, aerodynamic, internal flows and heat transfer etc. High efficiency is pursued not only by optimized designs but also from development of materials as well as application of new fuel. Along with development of high efficiency propulsion system, thermal management technology is also developed to meet the demand of external aerodynamic heating and internal combustion heat at a high flight speed. Common thermal management technology includes blade cooling in gas turbines and regenerative cooling in rocket engines. Thermal protection of engines achieves high efficiency by heat transfer enhancement, such as use of superficial fluid, nanofluids and new designed roughened surfaces. Also, some heat transfer enhancement methods in heat exchangers, battery and fuel cells are also introduced into propulsion systems.



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