



## **Free-Piston Engines: Recent Trends and Novel Designs**

Guest Editor:

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### **Message from the Guest Editor**

For many years, researchers have presented the potential of free-piston engines to increase efficiency, decrease emissions, run on multifuel, and offer compact architectures. Unlike conventional rotary engines, linear engine piston motion is not prescribed by the crankshaft, and no crankcase is needed. Furthermore, the elimination of the canted piston connecting the rod to the crankshaft reduces piston ring and skirt friction losses. The linear engine compression ratio is changeable and variable. This can enable advanced combustion regimes such as homogeneous charge compression ignition HCCI over a broad operating space. HCCI operates on lean mixtures and lower temperatures than spark-based ignition and diesel engines. Linear engines also enable the direct activation of loads, such as compressors, pumps, or linear electrical generators.

This Special Issue will be devoted to the latest research and development of free-piston engines, which are more widely applicable in this age of the solid-state manipulation of frequency and waveform. We seek submissions related to the design, development, analysis, and modeling of such free-piston engines.





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There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

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