

# Study of the Management of Energy Merge of a Hybrid Pneumatic Power System

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## ABSTRACT

In this way, the system can manage and optimize energy efficiently. The innovative power system can make the internal combustion engine function at the optimal condition, and can recycle the exhaust energy to improve the efficiency of the whole system. This study mainly applies the FLUENT 6.1 software in the experiment and goes on with the numerical simulation method. This thesis will examine how the system works when the flow to merge structure of three-dimension is controlled and adjusted. The phenomenon of converge state and heat transmit will also be analyzed. In addition, the change of mixture tube of the downstream will be observed. The two different energies can be combined through the converging device, and the key point in the experiment is to recycle the heat of the internal-combustion engine. If the pressure of compressed air is too strong, it will prevent the hot energy from transmitting and mixing smoothly. Furthermore, it will affect the total power in the flow way greatly. Therefore, in order to enable hot energy to function efficiently, the compressed air flow way and the valve size should be adjusted.

Keywords : Hybrid Pneumatic Power System, Energy Merge, Exhaust Energy Recycling

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