

基于Fluent的无过载离心泵改型设计 Improved Attempt of Non-overload Centrifugal Pumps Based on Fluent

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摘要: 针对无过载离心泵在性能方面的不足,提出了采用加大流量法和堵塞流道法相结合的无过载离心泵设计方法。并根据这一设计理念,在利用商业软件Fluent对离心泵进行性能预测的基础上,对IS50-32-160型无过载离心泵进行了3次改型尝试。预测结果表明:采用这一设计方法,可以有效地增加无过载离心泵的扬程、提高效率,改善无过载离心泵的性能。可为低比数离心泵的优化设计提供参考。The performance deficiency of non-overload centrifugal pumps was analyzed. A design idea of non-overload centrifugal pumps was suggested that combined the enlarged flow design with the clogged flow passage design. And, three improved attempts on IS50-32-160 non-overload centrifugal pump were carried out supported by commerce software Fluent to forecast the performance of centrifugal pumps. The forecast results indicate that by adopting this design thought, the head and efficiency of non-overload centrifugal pumps is increased. Furthermore, a reference is provided for optimal design of low specific speed centrifugal pump.

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