**عنوان مقاله:**

Detail Zero-Dimension Analysis of Centrifugal Compressor Impeller

**محل انتشار:**

دومین کنفرانس مکانیک،مهندسی برق و کامپیوتر (سال: 1399)

تعداد صفحات اصل مقاله: 16

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**خلاصه مقاله:**

Considering the essential and influential role of centrifugal compressors in wide range of industries, makes most of the engineers to research and study on designing and optimization of centrifugal compressors. Centrifugal compressors are the key part of oil, gas and petrochemical industries as well as gas pipeline transports. Since complete 3D design of the compressor consumes a considerable amount of time, most of active companies in the field, are profoundly interested in obtaining a design outline before taking any further steps in designing the entire machine. In this paper, a numerical algorithm for fast and accurate preliminary design of centrifugal compressor is presented. The design procedure is obtained under real gas behavior, using an appropriate equation of state. Starting from impeller inlet, the procedure is continued on by resulting numerical calculation for other sections include impeller exit, diffuser, volute and exit diffuser. Clearly, in any step suitable correction factors are employed in order to conclude in precise numerical results. Finally, the achieved design result is compared with available reference data.

**کلمات کلیدی:**

Centrifugal compressor, Process compressor, One-Dimensional design, Real gas, Thermodynamic design procedure

**لینک ثابت مقاله در پایگاه سیویلیکا:**

https://civilica.com/doc/1114197