

COMPUTER AIDED DESIGNING OF TURBINE COMPRESSORS

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One of the promising trends in the of computer technology application is an educational scope. An important step to make learning process more effective is the physical experiment, which stimulates active cognitive and creative approach to getting knowledge. In traditional forms of learning such possibility is realized through the implementation of the necessary laboratory work or hands-on sessions. Replacing the real (often outdated and faulty) laboratory stands is conducted in virtual labs and helps receive diverse knowledge in use of various computer technologies.

The main purpose of our work is the development of information system on disciplines "Turbine compressors" and "Designing of Turbo machines". This is an example of the introduction of computer technology in teaching. To do laboratory work students must use their knowledge on designing compressor and basic PC skills (working with peripherals, windowed interface and file systems).

Information system is a hardware and software system designed to automate the end-user focused activities, providing, in accordance with used in its processing logic, the possibility of obtaining, modifying and storing information. The main objectives of the information system are calculation of dependency graph and the dimensional gas dynamics characteristics of centrifugal compressor. The interface of the programme is quite simple for the students.

The compressor parameters and characteristics have been developed using some methods and procedures for all calculations. Also a simple interface, which makes usage of this programme easy enough, was designed. The knowledge domain was also researched.

After studying of the subject area and learning algorithms, calculations showed that, mathematic operations on a computer are necessary to explore the same volume of material in much shorter period of time. Specific methods and procedures were developed for all calculations of the characteristics and parameters of a compressor. Also an intuitive interface making the program easy and comfortable was developed. Designing of the information system resulted in the investigation of the task and role relevance of the information system in the learning process; examination of the knowledge domain for information system.

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