

**Project Title**

**Turbo vacuum industrial cleaning**

**Researchers**

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**Abstract**

This scheme introduces a negative pressure making method which is like vortex. Based on this method, an apparatus was made called TURBO VACUUM. In this apparatus, the fluid is rotated rapidly in a case and the Centrifugal force moves the air from inside the case to the wall of the case, and the negative pressure produced in the center. With this method, we made samples which provide 800 millibar of negative pressure and 6000 cubic meters per hour flow, which can be easily increased. The design of this apparatus is such that it can be folded down by placing several motors in order to provide the required suction flow So that it does not affect its cost. The construction and material technology it needs is easily available and it can be produced inside the country. In terms of manufacturing costs, it is very cost effective and because of the expensive equipment of competitors, it has a high competitive advantage. Since there is no rotating equipment in this apparatus, it has a long life span. This apparatus can simultaneously collect the material and transfer the material to the desired point with the same injection pressure. Although apparatus such as ejectors and venturi, etc. produce a vacuum by fluid injection, but due to differences in the structure and fluid rules used in them, there is very little pressure and flow, and they are used in very limited industries. This apparatus was registered in the Industrial Property Organization of Iran in 2010 as "VORTEX PNEUMATIC CONVEYING SYSTEM AND APPARATUS". It was also registered at the US Patent and Trademark Office in early 2016. Electricity is not used in this apparatus, which makes it an explosive apparatus for oil and petrochemical plants and the like.

