Third Laureate Research & Development

Scientific Committee
Mechanics

Research Work Title

Design and implementation of variable speed drive for medium-voltage and high power electrical motors

Executive Organization

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Abstract

In the major industries of Iran, it is essential to control the speed of electromotors. A variety of conventional approaches have been applied to address this problem. But, these approaches suffer from serious disadvantages. Nowadays, according to the advances in power electronic switches and digital control technology, variable speed drive systems are utilized to control the speed of electromotors. These systems are very complicated and high-tech. Due to the huge demand of the petroleum industry of Iran, for these systems and lack of the required technical knowledge, acquiring the technology related to the production of variable speed drive system one of the top ten necessary strategic technologies in the industry. Succeeding in the implementation of this project, in addition to meeting the demand the Iranian industries, it is possible to repair and maintain the previously installed systems in the country. Briefly, the major achievements of this project are as follows:

- Acquiring the technology related to variable speed drive systems for high-power electromotors as one of the necessary strategic technologies in the major industries such as mining, petroleum, transportation
- Considerable decrease of power consumption and environmental pollutions
- Decrease of the total cost of variable speed drive systems
- Acquiring the technology related to the implementation of medium-voltage and high-power electrical systems
- Possible export of the products of the project to regional and trans-regional markets