

Third Laureate Research & Development

- **Project Title:** Technical knowledge to produce catalysts for the production of polyethylene terephthalate (PET) petrochemical industry
- **Researcher:** Mohammad Reza Sovizi (Ph.D.)
- **Collaborator:** Farinaze Asgari



Abstract:

As one of the most important national mother industries, petroleum industry has recently achieved rapid growth which is mainly due to the fact that Iran has abundant supply of raw materials whose annual value added is growing in an ever-increasing rate. One of the critical units in petrochemical industry is the manufacturing unit of polyethylene terephthalate (PET) in which various types of catalysts are used. Catalysts used in this unit are very sensitive and have complex technical specifications. The presence of trace amounts of contaminants in the catalysts is one of the most important characteristics.

Our research is grounded in the novel scientific sources and numerous experiments by which we leverage our deep technical knowledge in the design and development of the manufacturing process to obtain catalysts with desired characteristics and minimum contaminants while considering domestic facilities and equipment in industrial scale. The proposed process is capable of extension to the production of diverse catalysts and analogous chemicals with high purity.

The most innovative approach to this project is underlying the different steps of the process including the design and construction of the reactors and the conditions under which the reactions were performed, design and construction of the evaporators, crystallizers, and dryers as well as the process conditions of each of them.

