Second Laureate
Applied Research

◆ Project title: **Applied Research in Cavitations and Micro-bubbles**

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Abstract:

In order to provide fundamental necessities of activities in the areas of Research and Development needed in our country on one hand, as well as having knowledge-driven characteristics on the other hand, it is essential to allocate suitable hardware and software responsive to its needs. The present plan is carried out on the basis of those criterions above mentioned. Outcome of the activities ranging from scientific products to industrial and technical know-how are presented in conferences and published in respected journals, parallel with providing answers to arisen industrial needs on technical problems.

Available statistics related to research outcomes and industrial contracts performed up to the present time are indicative of high rate of success in attaining the defined goals.

From the standpoint of described information above, the present plan consists of principal element in which produced technical know-how will be utilized in the applications of development as well as expansion in industrial sector. Conspicuously, main criteria for successful performance of this plan are continuous utilization of industrious engineering design procedures.

The present plan was carried out on the basis of three fundamental elements. The foremost of which is Experimental facilities, to be utilized for the development of Drag reduction systems as well as the performance tests for Hydro-mechanical Equipment of dams.

Initially; the close looped high speed water tunnel is designed and equipped with the instrumentations for measuring real time parameters of flow field at different positions with high precision and fast data acquisition systems. This designed system has a vital role to investigate the drag reduction systems via super cavitations and also in micro bubble generation systems, as well as studying the hydro dynamical phenomena and design of bodies and control surfaces of underwater vehicle and propulsion systems. The other filed of interest tantamount in importance is hydro mechanical engineering design services and experimental analysis of flow behavior of hydro power projects, such as channels, gates and Howell Bunger valves.