technologies improving the evaluation of the measurement device and the accuracy of the tare load system, measurement accuracy of the individual physical properties and the accuracy of the measurement system. The data acquisition system was optimized based on the improvement methods. The measurement of the individual properties was verified and the evaluation method of the enhanced measuring system was established. Based on these results, the design technology for the standard measurement device was completed and the uncertainty of the enhanced measurement system was analyzed and evaluated through the test of the real engine during the final third year.

For the latter goal of “establishment of the control technology and improvement of the precision control", the primary parameters of the control system were derived and the performance was diagnosed and the modeling system of the facility was developed during the first year. The second year's work scope included the analysis of the dynamic characteristics of the derived primary parameters of the control system as well as the derivation of the method for improvement. Some of the derived improvement method was applied and the modeling system of the facility was integrated with a modeling system of the engine. During the third year, the improved facility control system and the simulation system for the facility were evaluated.

Ⅳ. Results of the Research

This research has been conducted in three years. At the first year, the existing measurement system and the control system were analyzed, and the fundamental research on the standard measuring devices and the tare load system was conducted. The improving method was derived by analyzing the estimating equations regarding the measurement uncertainties and the existing system. The sensors were calibrated at the KRISS. The primary parameters of the control system were derived and their performance was diagnosed, and the modeling system of the facility was developed for the purpose of improving the control system. The improved design method was derived from the basic