

## Lab View를 이용한 등속조인트 측정시스템 개발

박광수<sup>†</sup>(부산대) · 김봉준\*(부산대) · 장정환\*(부산대) · 최경호\*(부산대) ·  
문영훈\*(부산대)Development of CV-Joint Outer Race Ball Groove Measurement System  
Using by Lab View

K. S. Park, B. J. Kim, J. H. Jang, K. H. Choi and Y. H. Moon

**Key Words:** CV-Joint(등속조인트), Outer Race(외륜), Ball Groove(내면굴곡), Lab View(랩뷰)**Abstract :** The outer race of CV(constant velocity) joint is an important load-supporting automotive part that transmits torque between the transmission gear box and driving wheel. The outer race is difficult to forge because its shape is very complicated and the required dimensional tolerances are very small. To guarantee the dimensional accuracy of the forged CV joint, the quick and precise measurement is required to increase the inspection speed of forged products. Therefore in this study, CV joint outer race ball groove measurement system using by lab view to decrease the inspection time of measuring system has been developed to cope with forging cycle time. The measured inspection time confirms that the using lab view is very effective in CV joint measurement system.

## 크리깅 근사모델의 통계량을 이용한 강건최적설계

이권희<sup>†</sup>(동아대)A Robust Optimization Using the Statistics Based on Kriging  
Approximation Model

Kwon-Hee Lee

**Key Words:** Robust Design(강건설계), Kriging(크리깅), Uncertainties(불확실성)**Abstract :** Robust design technology has been applied to versatile engineering problems to ensure consistency in product performance. Since 1980s, the concept of robust design has been introduced to numerical optimization field, complementing the deficiencies deterministic optimization. The robustness is determined by a measure of insensitiveness with respect to the variation of a response. However, there are significant difficulties associated with calculation of its mean and variation. This research suggests a robust design methodology overcoming the current limitation. The kriging interpolation method is utilized to obtain the surrogate approximation model of a response function. The statistics such as mean and variance are obtained based on the reliable kriging models. Then, the simulated annealing algorithm of global optimization methods is adopted to determine the global robust design. The mathematical problem and the two-bar design problem are investigated to show the validity of the proposed method.