실시간 원격 제어시스템을 사용한 무인자율차량 개발

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Design and Development of Unmanned-Ground-Vehicle Using Real-Time Remote Control System

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Key Words: UGV(무인자동차),OCU(원격조종제어기)

Abstract : Mechatronics is a synthesis of mechanical and electronic domains that overlap in the design. A UGV (Unmanned Ground Vehicle) is a smart product that has mechatronics blended into its design configuration. This study shows the design and development for an UGV and OCU(Operating Control Unit). The UGV frame which has a 4-Wheel-driven mechanism and diesel source was used in this study. The actuators as control inputs of the UGV are a steering wheel actuator, an acceleration-breaking actuator and gear actuators.

ESP 유압 시스템의 모델기반 압력 제어기 설계

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A Model-Based Controller Design for a Vehicle ESP Hydraulic System

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Key Words: hydraulic system(유압 시스템), mathematical model (수학적 모델),
ESP(Electronic Stability Program, 차량 안정화 프로그램), controller (제어기)

Abstract : This paper describes modeling and control design for the hydraulic system in Electronic Stability Program (ESP) system . A nonlinear mathematical model of the ESP hydraulic system is proposed and its accuracy is experimentally verified. The proposed mathematical model is simplified to use in a model-based controller design. The designed controller determines the duty ratio of the valve explicitly by means of making use of the simplified mathematical model in the ESP hydraulic system. The accuracy of the mathematical model and the performance of the designed controller is validated via experimental results.