World Academy of Science, Engineering and Technology
International Journal of Mechanical and Mechatronics Engineering
Vol:8, No:02, 2014

Fuzzy Based Stabilizer Control System for Quad-Rotor

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Abstract : In this paper the design, development and testing of a stabilizer control system for a Quad-rotor is presented which is focused on the maneuverability. The mechanical design is performed along with the design of the controlling algorithm which is devised using fuzzy logic controller. The inputs for the system are the angular positions and angular rates of the Quad-Rotor relative to three axes. Then the output data is filtered from an accelerometer and a gyroscope through a Kalman filter. In the development of the stability controlling system Mandani Fuzzy Model is incorporated. The results prove that the fuzzy based stabilizer control system is superior in high dynamic disturbances compared to the traditional systems which use PID integrated stabilizer control systems.

Keywords : fuzzy stabilizer, maneuverability, PID, quad-rotor
Conference Title : ICME 2014 : International Conference on Mechatronics Engineering
Conference Location : Kuala Lumpur, Malaysia
Conference Dates : February 13-14, 2014