

Sistem pengendali keseimbangan bola berbasis PC

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Abstrak

Telah dibuat sistem pengendali keseimbangan bola berbasis PC. Sistem pengendalian dilakukan dengan PC yang kemudian diterjemahkan microcontroller dan selanjutnya di kirim ke motor DC untuk diproses agar didapat hasil yang kita inginkan. Sistem pengendalian di pc menggunakan metode PID, dari PID akan menghasilkan angka-angka (set point) yang akan dikirim ke microcontroller. Pengendalian pada microcontroller adalah pada PWM. Set point yang telah ditentukan oleh PID dimasukkan ke PWM. PWM akan menghasilkan kecepatan motor sesuai dengan yang ditentukan PID, setelah itu tegangannya di kirim ke motor DC. Maka motor DC akan bergerak ke kiri atau ke kanan tergantung set point yang ditentukan oleh PID. Bola akan bergerak lalu berhenti di titik tertentu sesuai dengan set point yang telah ditentukan. Kata kunci-PID, PWM, Motor DC, Microcontroller

.....Had been done the ball balancing control's system based on PC. The System control was carried out with PC that afterwards was translated microcontroller and then sent to DC motor to be processed in order to be gotten by results that were wanted by us. The control system in pc used the PID method, from PID will produce figures (the set point) that will be sent to microcontroller. The control in microcontroller was to PWM. Set point that was determined by PID was put into PWM. PWM will produce the speed of the motor in accordance with that was determined by PID, after that his voltage was sent to the motor of DC. Instead of the DC motor will move to left or to right depend the set point that was determined by PID. Ball will move then stopped in the certain point in accordance with the set point that was determined.