

ABSTRACT

MAGNETIC LEVITATION SYSTEM USING A PID-BASED METHOD OF MICROCONTROLLER

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The development of technology control system nowadays towards the application of electromagnetic technology namely the control magnet which can levitate objects. The creation of this tools using hall effect sensor As feedback from the system. Using the hall effect sensor is magnetic levitation tools that can cast objects against the force gravity.

The metods use making of these tools using a PID controller as a control object to be able to levitate stabily. Because the control PID can minimize errors, minimize error of steady-state response and fix it.

By trial and error it brings value $K_p = 11000$, $K_i = 4000$ and $K_d = 6000$. Done some testing based on terhdap sensor output voltage range, the coil current against distance and experiment system response. The overall test results, the system has a success rate of 92%. Therefore the system can be utilized as the initial step in the making of tools related to the magnetic levitation system.

keywords : magnetic levitation ,PID, hall effect