PID Controller Based Intelligent Fuzzy Control of a SPM System Design

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Abstract

This research is to use Ziegler-Nichols PID controller as a basement for the fuzzy controller design in
a Scanning Probe Microscope (SPM) to reduce the hysteresis effect. Comparing the results with a previous
design for the outer-loop with PI compensator are also made, one can see that the proposed system is more
robust.

Keyword：Ziegler-Nichols PID controller, PID Fuzzy controller, SPM, Hysteresis effect, LVT