

# Eliminating Hysteresis Effect of Force Actuator in a SPM

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## Abstract

This research is to use fuzzy controller to eliminate hysteresis effect of a force actuator for a Scanning Probe Microscope (SPM). This improvement has been verified by MATLAB simulation and practical implementation to reduce the hysteresis effect of the force actuator. Comparisons with two previous designs with and without Linear Velocity Transducer (LVT) for inner-loop feedback compensation are also made. Thus the new system design is cheaper and valuable.

Keyword : SPM, LVT, LVDT, Fuzzy controller, PI compensator, Force actuator, Hysteresis effect