

Abstract

Feenstra J.P., P.C. Breedveld and J. van Amerongen, "*Actuation methods for a Surface AcousticWave Motor*", Proceedings of the 2nd Workshop on Piezoelectric Materials and Applications in Actuators, 2nd International Workshop on Piezoelectric Materials and Applications in Actuators, May 22 - 25, 2005, Heinz Nixdorf Institute, University of Paderborn, Paderborn, Germany, 2005

A surface acoustic wave motor has a (varying) dead zone in the relation between control input and motor velocity. From a control point of view it is beneficial to eliminate this dead zone. Therefore, four actuation methods are compared to examine their ability to deal with this problem. This examination shows that pulse width modulation (PWM) eliminates the dead zone, without the risk of overcompensation and without a large decrease in efficiency.

Therefore, this method is recommended for SAW motor control, in particular closed-loop control.