Evaluation of Breaking Performance in Vibration-Assisted Electrostatic Surface Induction Actuator - DTU Orbit (08/11/2017)

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This paper evaluates breaking performance of an electrostatic surface induction actuator. The actuator is equipped with piezoelectric vibrator such that the friction between the slider and the stator electrodes can be dramatically reduced by squeeze-film effect. In such an actuator, the friction force can be changed by turning on and off the vibrator. The friction change can be utilized for high-performance slider motion control; for example, friction can be increased by switching off the vibrator when the slider needs to stop. In this paper, we evaluated how fast the slider can stop in several conditions. The result clearly shows the effect of friction change in breaking performance of the actuator.

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