Abstract Submitted
for the DAMOP12 Meeting of
The American Physical Society

Economical Nanoactuator Alternatives to Lead Zirconium Titanate JIN WANG, GABE ELGHOUL, STEPHEN PETERS, University of Michigan Dearborn — This paper describes using inexpensive commercially available ceramic capacitors as a substitute for the lead containing and relatively expensive PZT based nano actuators. A sample PZT actuator is compared with actuators made from both X5R and Y5V type ceramic dielectric capacitors using white light interferometry and a spectrometer. This work is useful in that it can provide nano-motion capability to budget constrained undergraduate and graduate level research laboratories. Additionally, unlike the PZT material the alternative ceramic materials do not contain lead which is needed to create products compliant with the European Rohs (Restriction On Hazardous Substances) initiative.

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Date submitted: 20 Jan 2012 Electronic form version 1.4