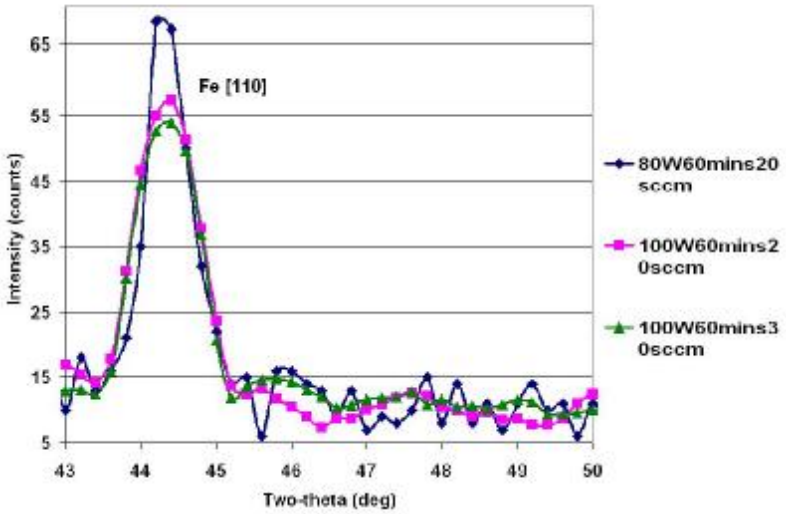
Integration of Thin-Film Galfenol with MEMS Cantilevers for Magnetic Actuation

Rajneeta R. Basantkumar and Bethanie J.H. Stadler
Electrical and Computer Engineering, University of Minnesota

Motivation:

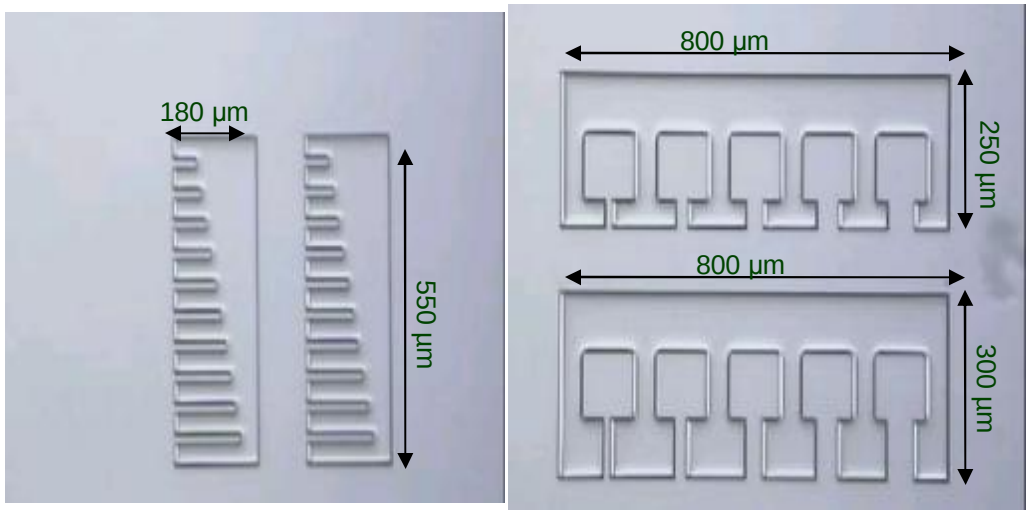
- MEMS cantilevers using thin films of Galfenol



- The films had a preferred crystallographic orientation of (110) as expected because it is the close-packed orientation for this BCC material.

Results

- The thin films of Galfenol with magnetostrictions of up to 150ppm were integrated with MEMS cantilevers and they were actuated magnetically.



Tungsten/Galfenol beams on Si wafer

Publications:
Rajneeta R. Basantkumar, Bethanie J. H. Stadler, William P. Robbins, and Eric Summers, submitted to APL Jan 05.