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Title: Deformation and Fatigue Resistance of Al/a-Si
Core-Shell Nanostructures Subjected to Cyclic
Nanoindentation

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Deformation and Fatigue Resistance of Al/a-Si Core-Shell Nanostructures Subjected to Cyclic Nanoindentation

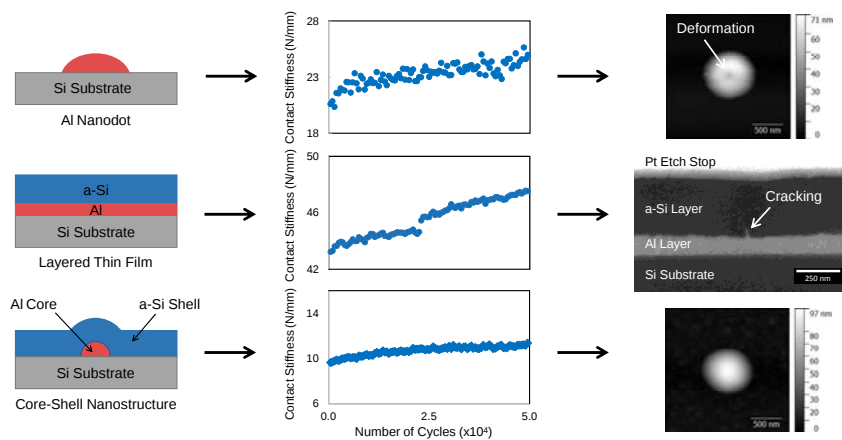
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Graphical abstract



Highlights

- The fatigue properties of Al/a-Si core-shell nanostructures were studied.
- Changes in contact stiffness are used as indicators of damage formation.
- Al nanodots and Al/a-Si layered thin films fail due to cyclic nanoindentation.
- Hardening occurs due to dislocation nucleation in Al and a-Si densification.
- Al/a-Si core-shell nanostructures exhibit prolonged fatigue life.

Abstract

Nanostructure-textured surfaces can reduce friction and adhesion of micro- and nano-electromechanical systems (MEMS/NEMS). For MEMS/NEMS incorporating moving parts, the

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