

Polysilicon Surface-Micromachining

- Uses IC fabrication instrumentation exclusively
- **Variations:** sacrificial layer thickness, fine- vs. large-grained polysilicon, *in situ* vs. POCL₃-doping

300 kHz Folded-Beam Micromechanical Resonator

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Electroplating: Metal MEMS

- Use electroplating to obtain metal structures
- When thick: call it "LIGA"
- **Pros:** fast low temp deposition, very conductive
- **Cons:** drift, low mech. Q but may be solvable?

RF Switch

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Bulk Micromachining and Bonding

- Use the wafer itself as the structural material
- **Adv:** very large aspect ratios, thick structures
- **Example:** deep etching and wafer bonding

Micromechanical Vibrating Ring Gyroscope

[Najafi, Michigan]

Microrotor (for a microengine)

[Pisano, UC Berkeley]

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