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A Low Loss DC-Bias Line for Electrostatically MEMS Tunable Microwave Resonators and Filters

A new DC-bias line arrangement for MEMS actuators enables high-performance electrostatic actuation in tunable microwave resonators and filters without compromising radio frequency performance or introducing power loss.

Electrostatic actuation is a common method used to drive microelectromechanical systems (MEMS) devices. The activation is achieved by applying a voltage difference between opposite electrodes of a deformable capacitor. Currently, DC-bias line arrangements in electrostatic actuators substantially impair radio frequency performance and introduce power loss.

Purdue University researchers have developed a DC-bias line arrangement that permits electrostatic actuation of MEMS actuators for tunable microwave resonators and filters. It can achieve electrostatic actuation without compromising performance or introducing power loss.

Advantages:

-Achieves electrostatic actuation without compromising radio frequency performance or experiencing power loss

Potential Applications:

-Electronics industry

-Electronics manufacturing

TRL: 5

Intellectual Property:

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