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(54) Title: METHOD AND SYSTEM FOR LOCALLY ANNEALING A MICROSTRUCTURE FORMED ON A SUBSTRATE AND DEVICE FORMED THEREBY

(57) Abstract

A batch–compatible, post–fabrication annealing method and system are described that can be used to trim the resonance frequency and enhance the quality factor of mechanical microstructures, particularly micromechanical structures, such as micromechanical resonators. The technique involves running a current through a micromechanical structure, or through a nearby microstructure (e.g., a nearby resistor), thereby dissipating power and heating the structure to temperatures high enough to change its microstructure and/or its material properties, which then lead to changes in the microstructure's resonance frequency and quality factor. For micromechanical structures, this technique is particularly useful, since it allows for convenient, simultaneous trimming of many microstructures all at once, and can be implemented via the simple application of a voltage across the anchor points of a micromechanical structure.

