

Accepted Manuscript

Dynamics and vibration analysis of an electrostatically actuated FGM microresonator involving flexural and torsional modes

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PII: S0020-7403(18)30670-2
DOI: <https://doi.org/10.1016/j.ijmecsci.2018.08.003>
Reference: MS 4461



To appear in: *International Journal of Mechanical Sciences*

Received date: 4 March 2018
Revised date: 26 July 2018
Accepted date: 6 August 2018

Please cite this article as: A. Shoghmand , M.T. Ahmadian , Dynamics and vibration analysis of an electrostatically actuated FGM microresonator involving flexural and torsional modes, *International Journal of Mechanical Sciences* (2018), doi: <https://doi.org/10.1016/j.ijmecsci.2018.08.003>

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Highlights:

- A nonlinear pedal like FGM microresonator under electrostatic actuation is modeled
- Both softening-type and hardening-type behaviors are observed in the system
- Pull-in voltages are calculated for various FG material profiles and gap distances
- Internal resonance of 1:2 ratio between the two modes of the system is studied
- Using FG material provides a wider frequency bandwidth during design process

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