

## NANOELECTROMECHANICAL SYSTEMS (NEMS):

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NEMS are an emerging technology and they have been tools for a lot of studies about mesoscopic physical mechanisms. In this study, we will discuss their structure and properties that makes useful for a variety of applications. Like MEMS (microelectromechanical systems), the NEMS are devices that uses electrical and mechanical functions but in nanoscale. The MEMS have a mechanical movement that can move after a force, for example a pressure difference. NEMS are use the same basic structure but in nanoscale. That leads to the fact that the NEMS are more sensitive to any external stimulus. NEMS also monitores the frequence at a vibration with the use of a closed loop circuit. These properties help them to be useful in applications that needs to measure extremely small masses and forces.

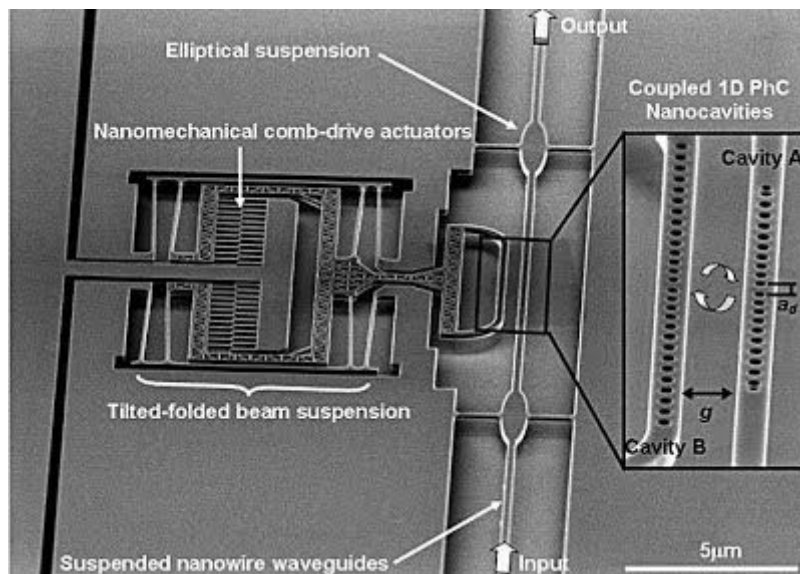


Figure 1: NEMS tunable PhC Cavities

### References:

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2. Nanoelectromechanical Systems, Laurent Duraffourg, Julien Arcamone
3. X Chew, G Zhou, F S Chau, J Deng, X Tang, and Y C Loke, "An in-plane nano-mechanics approach to achieve reversible resonance control of photonic crystal nanocavities," Optics Express, Vol. 18, No. 21, p. 22232-22244 (2010).