Nanocrystalline silicon, a material for future applications

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Nanocrystalline silicon is an interesting candidate for electromechanical and optomechanical systems due to the mechanical, thermal and optical properties and isotropy of the material. The properties have been probed by various characterisation tools, including thermoreflectance, optomechanical cavities, electromechanical systems and picoacoustics. Interestingly, nanobeams made of nanocrystalline silicon show higher Q-values and dynamical bandwidths than single crystalline silicon and provide a highly flexible technology platform. In this presentation, we will describe the specific properties of nanocrystalline silicon and the prospects in NEMS and NOEMS applications.

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