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**TOPIC:**

Seven years of Graphene resonators – from Scotch Tape to CVD and beyond

**ABSTRACT:**

I will present results on graphene resonant micromechanical devices. The talk will provide a historical perspective and also describe results of new and ongoing investigations. Graphene resonators are atomically thin membrane devices that display many unique properties that can be exploited due to the inherent “tunability” of doubly clamped graphene structures (achievable by gate voltage enabled tension tuning), their low mass and optical absorption. Our group at Cornell has exploited the optical read-out of these structures. Recent results on thermo-optical interactions, as well as the non-linear response and mode coupling will also be discussed. This work is the result of collaborations between the groups of Harold Craighead, Jeevak Parpia and Paul McEuen and other faculty and their students and post doctoral associates funded by the Materials Research Center and other entities at Cornell.

**PROFILE:**

Jeevak Parpia is Chair and Professor of Physics at Cornell University in Ithaca NY, USA. He earned his Ph.D at Cornell in 1979, and his B.S. in Physics at the Illinois Institute of Technology in 1973. He has been Professor of Physics at Cornell since in 1992, was an Associate Professor of Physics from 1986-92 at Cornell, and moved to Cornell from Texas A&M where he was Assistant Professor (1979-84) and Associate Professor 1984-86. His principal research interests are: superfluid  $^3\text{He}$ , superfluids under confinement and with disorder, micro and nano mechanics, physics of graphene, and glassy systems. He was an Alfred P. Sloan Fellow, a Guggenheim Fellow and is a Fellow of the American Physical Society. He has held visiting positions at the Walther Meissner Institute Garching, and Royal Holloway University of London.