

Fig.1 Comparison of measured and simulated results of doubly clamped graphene resonators

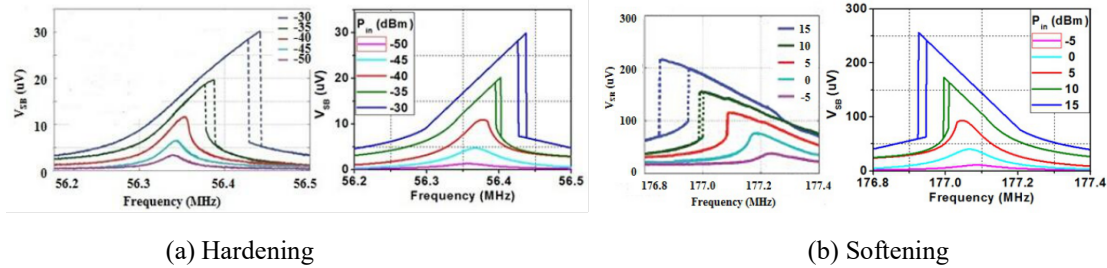


Fig.2 Mechanical nonlinear characteristics of G-RCTs, show both hardening (a) and softening (b) of nonlinear spring constants. The left pictures in (a) and (b) are experimental data.

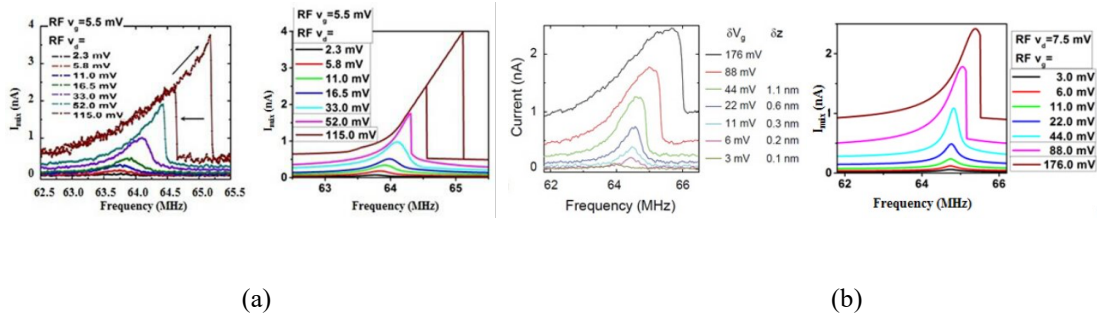


Fig. 3 Duffing nonlinear behavior.  $I_{mix}$  versus driving frequency for different drive amplitudes sweeping (a)  $v_d$  and (b)  $v_g$ : (a) Sweeping  $v_d$ , hysteresis behavior observed with increasing  $v_d$ . (b) Sweeping  $v_g$ , no hysteresis behavior observed with increasing  $v_g$ . The left pictures in (a) and (b) are experimental data.