

Fig. 1: Typical frequency response of one nanoresonator of the array measured with electrostatic (orange) or thermal (blue) actuation. Due to Joule heating the thermal drive induces a downshift. Inset: Setup with SEM picture of a typical NEMS. The color highlights the actuation schemes being compared.

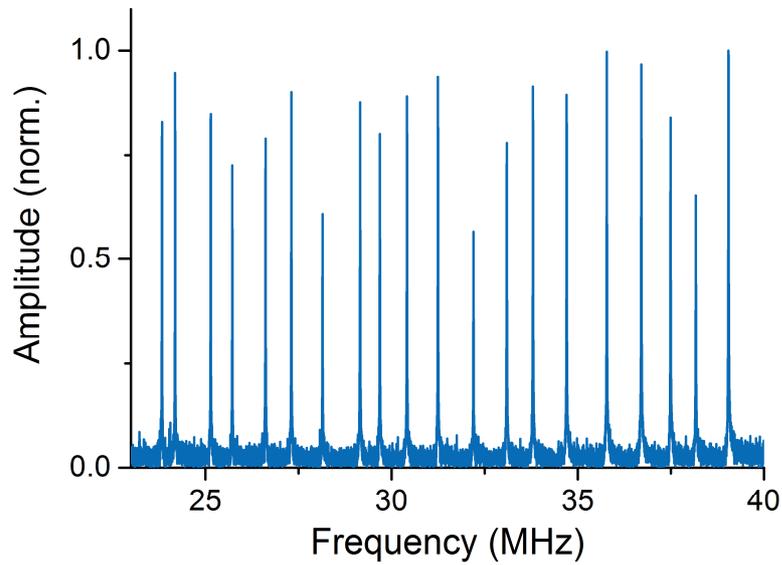


Fig. 2: Frequency response of the first mode of the twenty NEMS array thermally actuated. Each NEMS' resonance frequency is evenly separated to enable a sequential addressing for real-time mass spectrometry.

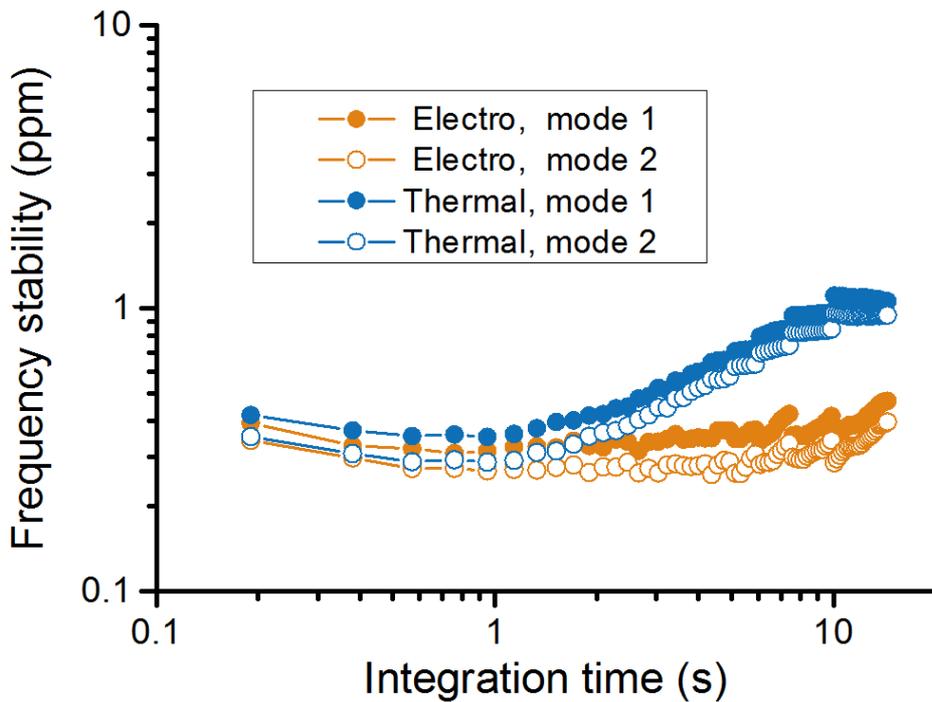


Fig. 3: Averaged frequency fluctuations of the first two flexural modes of the NEMS of the array driven with electrostatic (orange) or thermal (blue) actuation. Due to Joule heating a slow frequency drift occurs. However at short integration times, for real time mass spectrometry, this effect is negligible.