Shuttle and Electrode Displacement Output Voltage 0.4 x_1 (Shuttle) x_2 (Electrode) 10 0.3 Displacement (μm) Voltage V_{out} (mV) 5 0.2 0.1 0 0.0 -5-0.1-10-0.20.30 0.32 0.34 0.28 0.36 0.28 0.30 0.32 0.34 0.36 Collision Force Damping Force 0.10 0.10 0.05 0.05 Force F_c (μN) Force F_d (μN) 0.00 0.00 -0.05-0.05-0.10-0.10 $\begin{array}{c}
0.32 \\
\text{Time } t \text{ (s)}
\end{array}$ $\begin{array}{c}
0.32 \\
\text{Time } t \text{ (s)}
\end{array}$ 0.34 0.28 0.34 0.28 0.30 0.36 0.30 0.36