

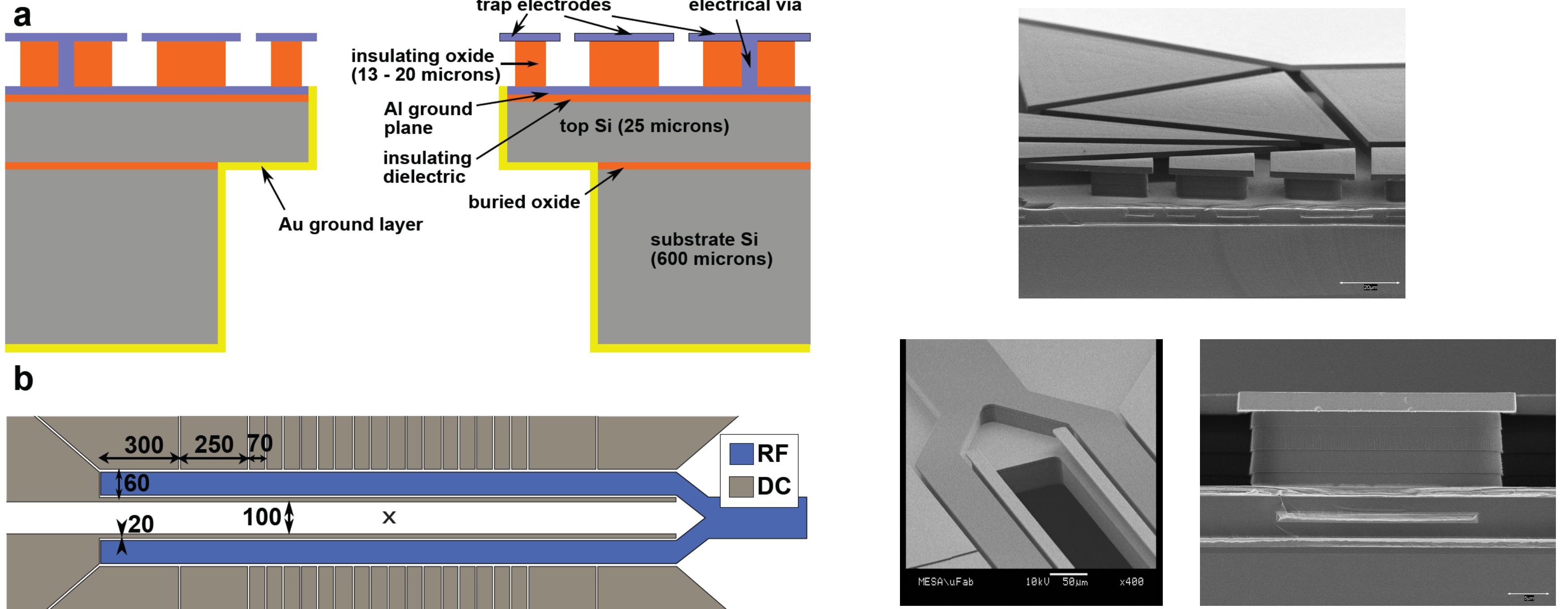
Robust Microfabricated Surface Ion Traps with Arbitrary Geometries



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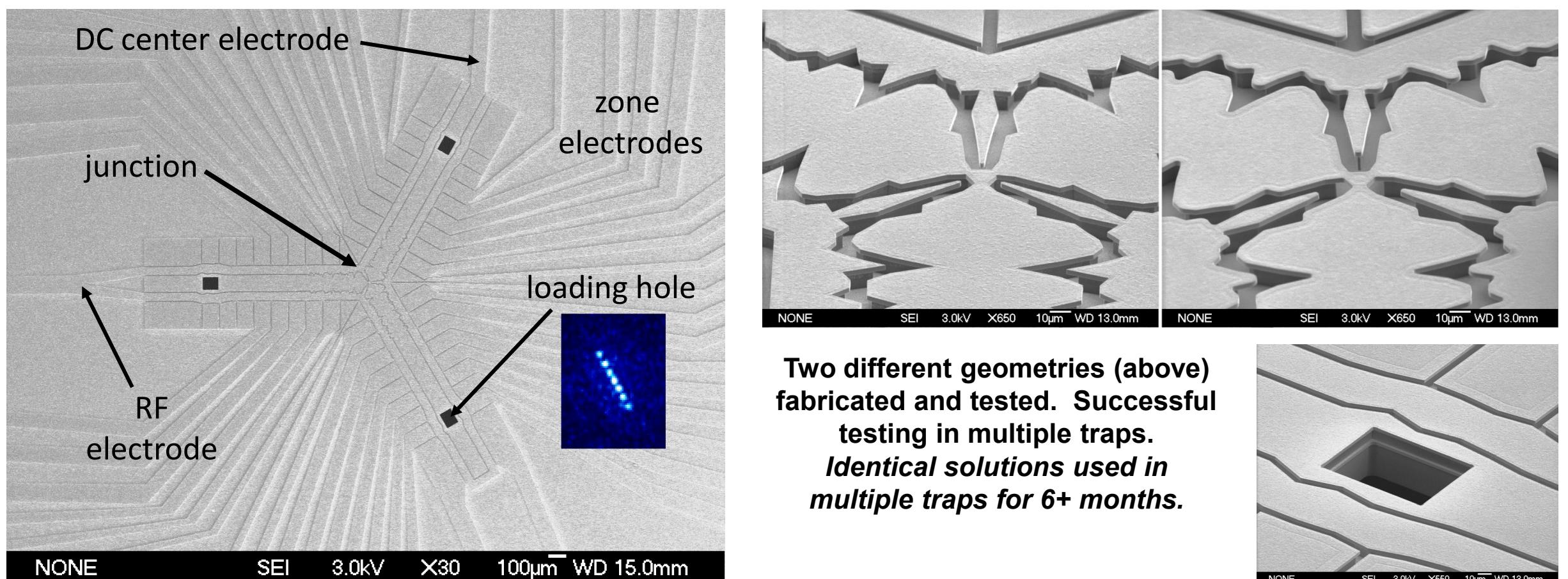
Surface Electrode Ion Microtrap Fabrication



D. Stick, et al. Demonstration of a Microfabricated Surface Electrode Ion Trap, [arXiv:1008.0990v1] (2010).

Junction Surface Ion Traps: Design, Fabrication, and Testing

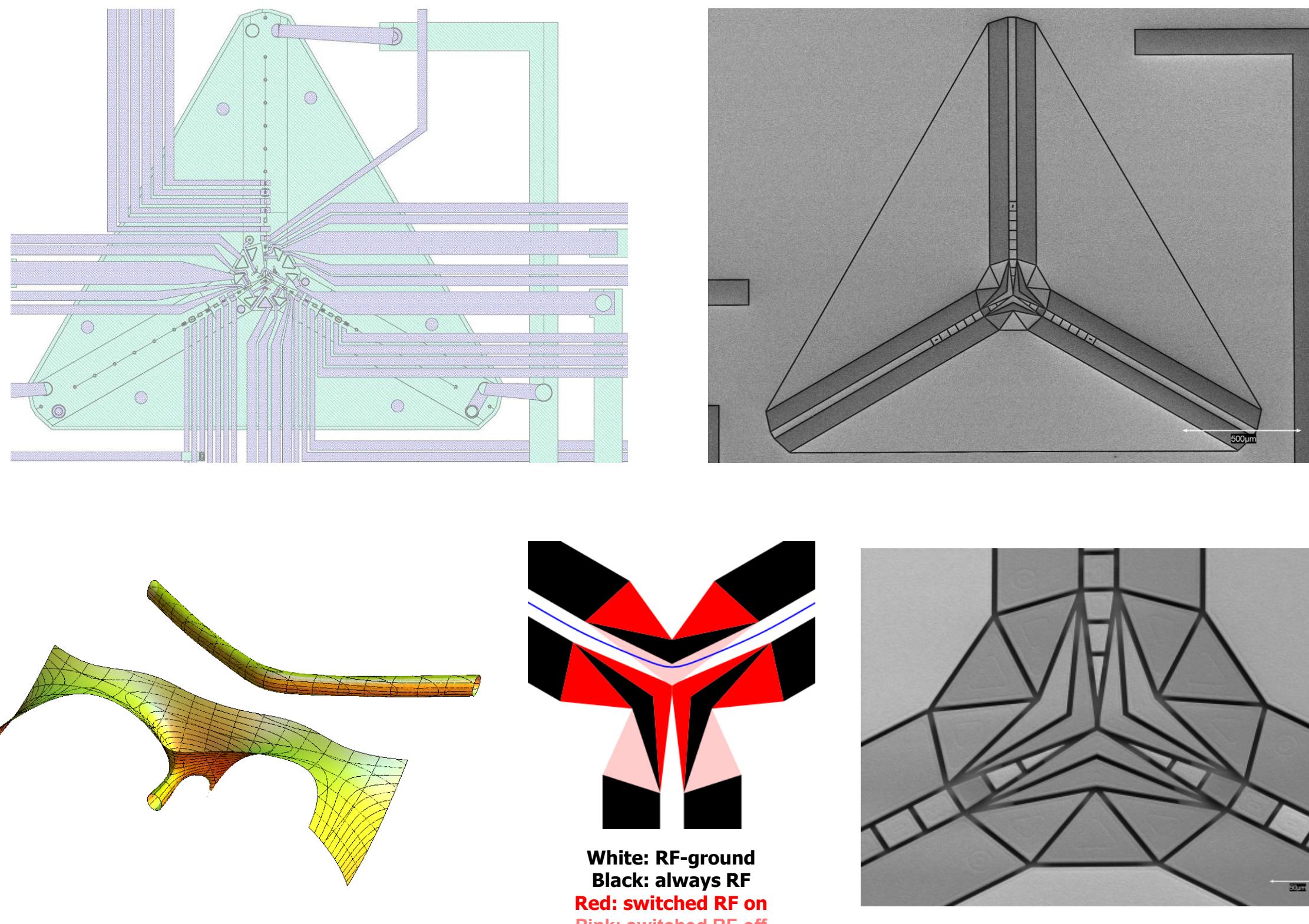
Original Y-Trap Junction Design



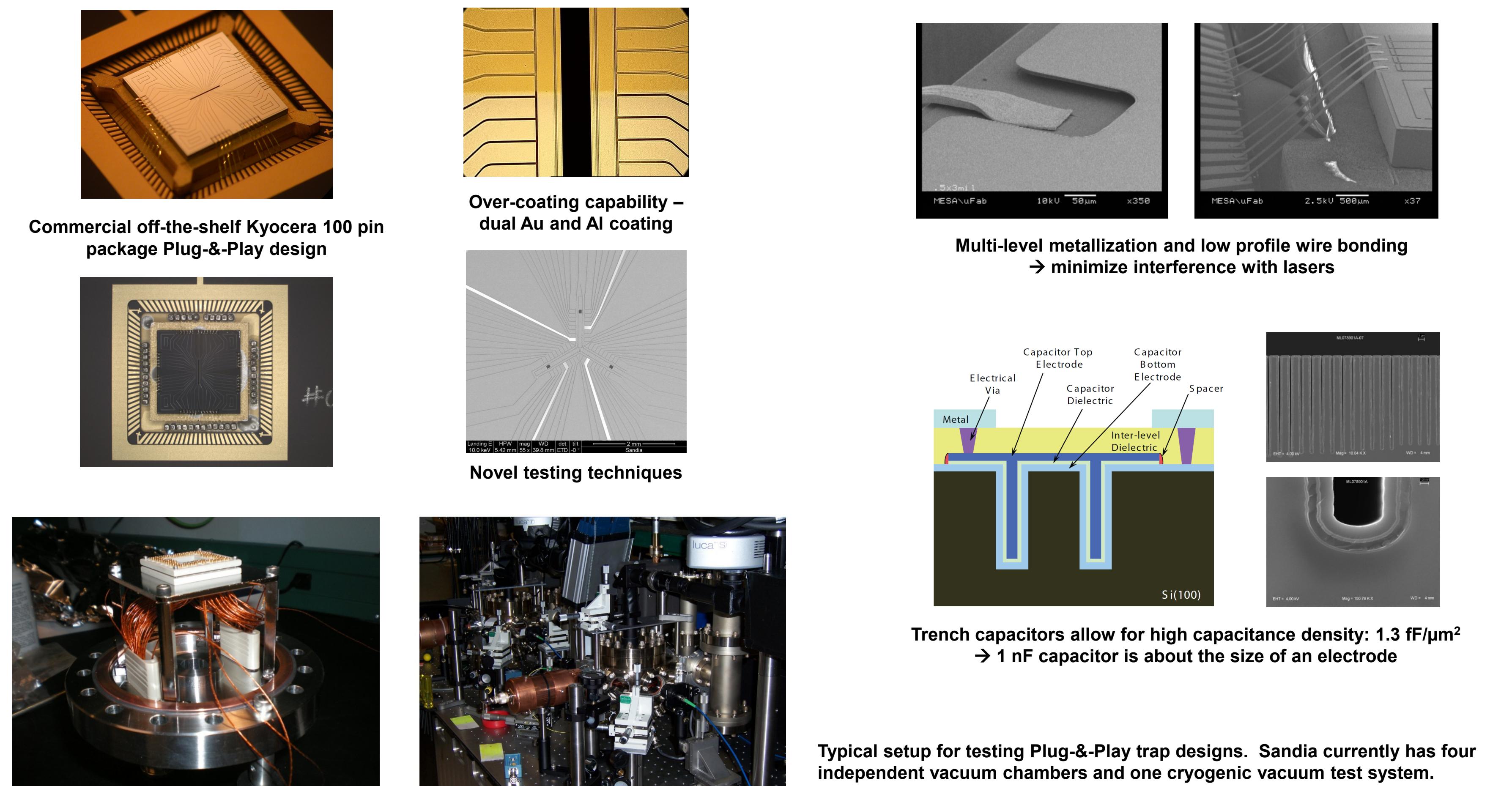
Successful Junction shuttling also at Georgia Tech campus group of Ken Brown. Successful junction shuttling was performed with identical voltage solution used also at Sandia.

Y-Junction with RF Switchable Electrodes

In collaboration with NIST Boulder, we have fabricated and delivered a Y-Junction trap with electrodes that can be either RF or DC depending on the desired trajectory.

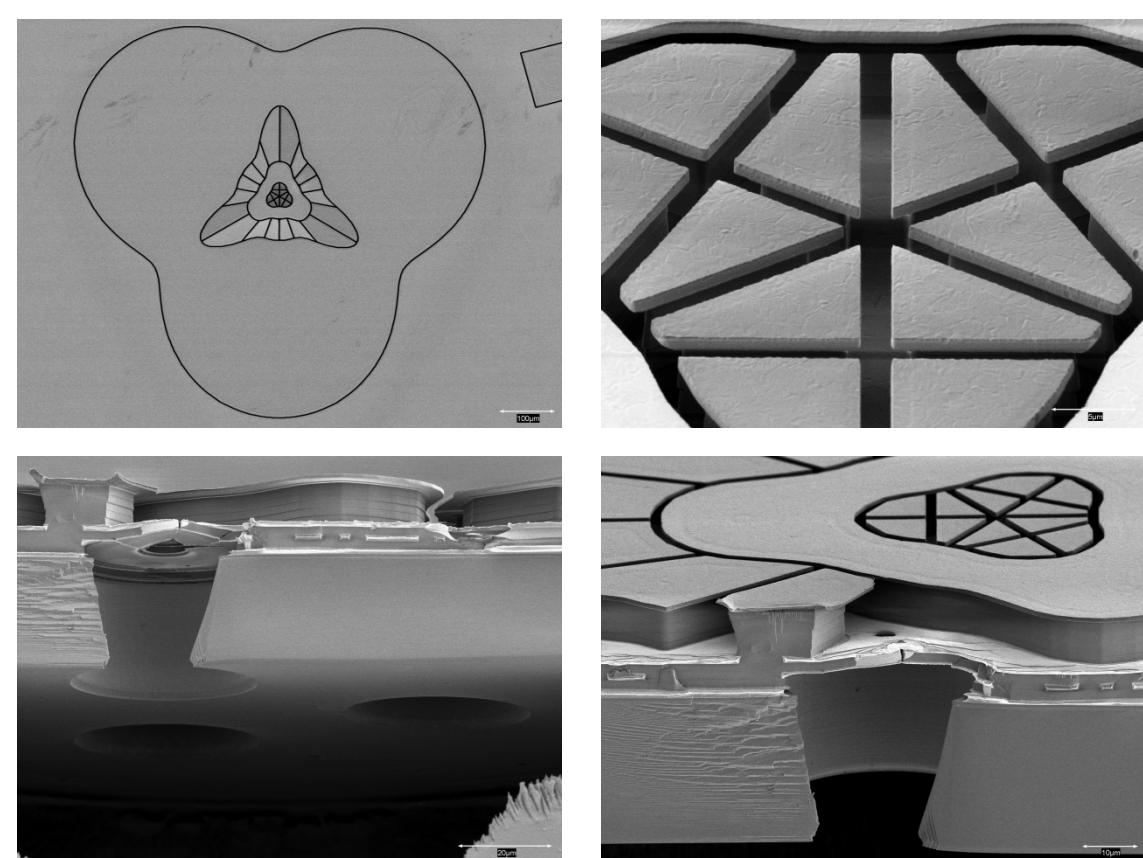
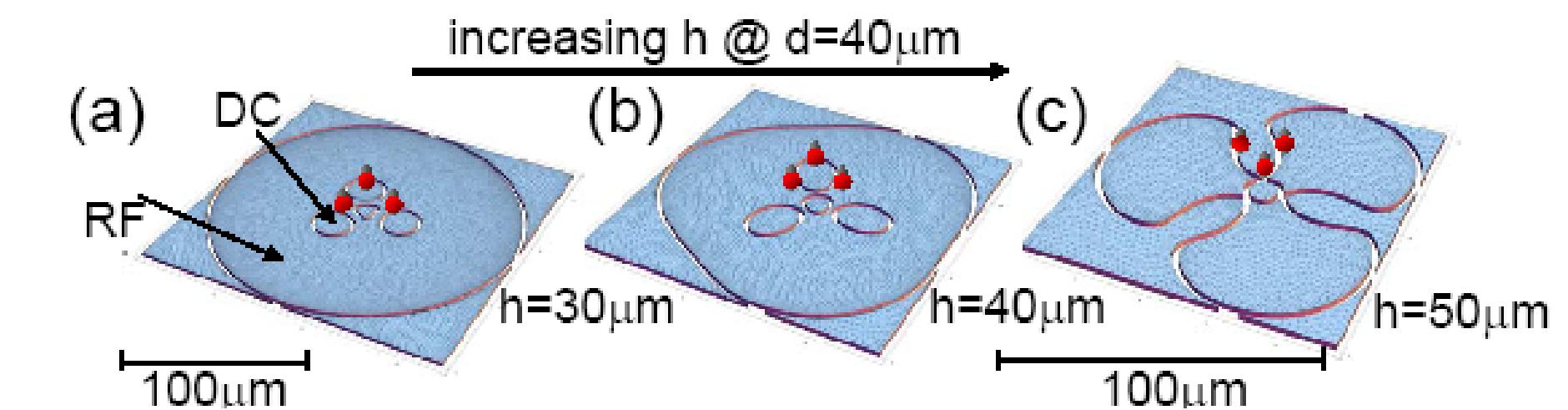


Ion Trap Packaging & Integrated Capacitors

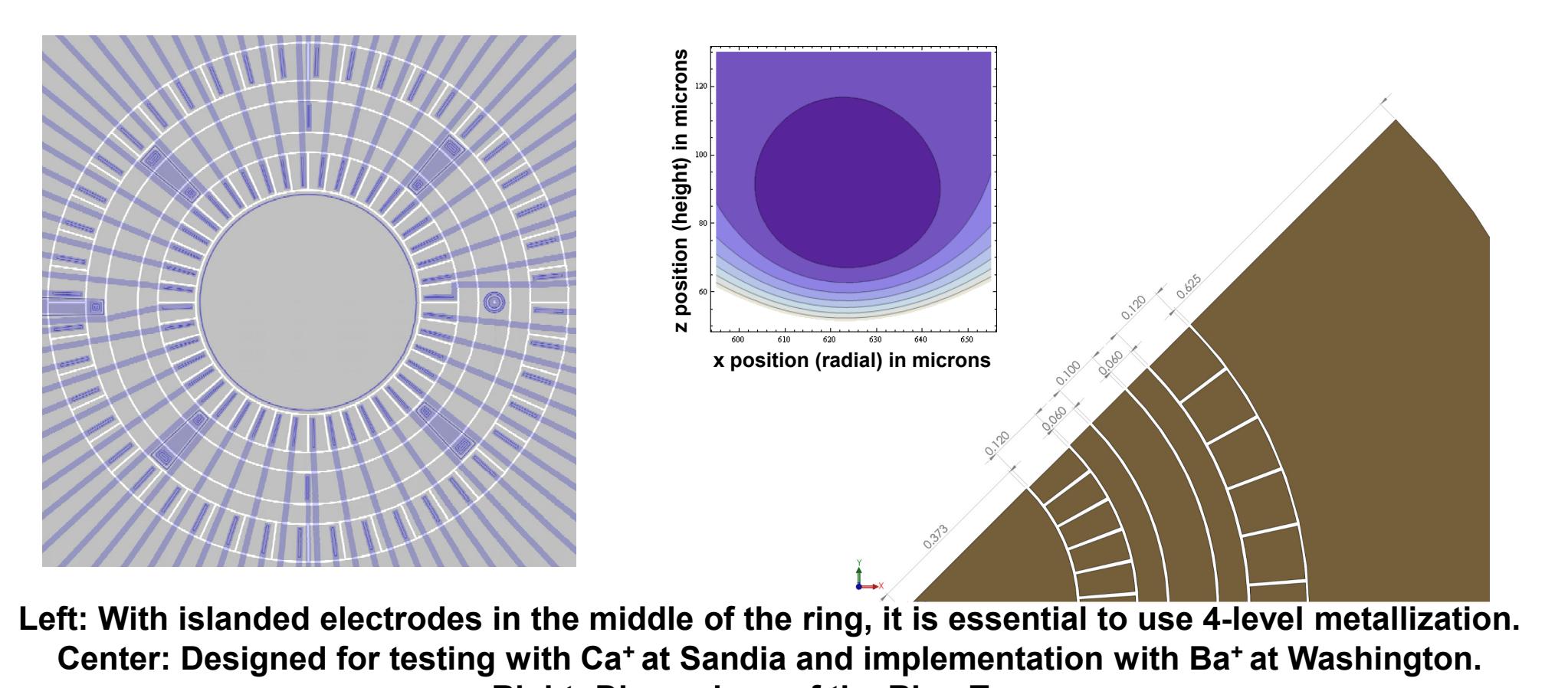


Quantum Simulation

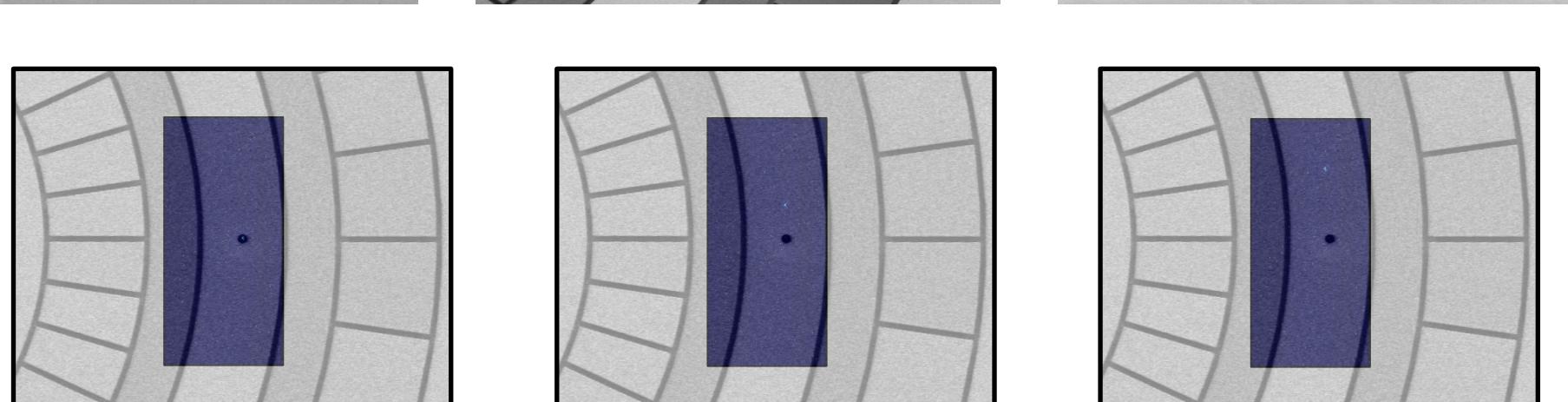
Collaboration with NIST and MPQ



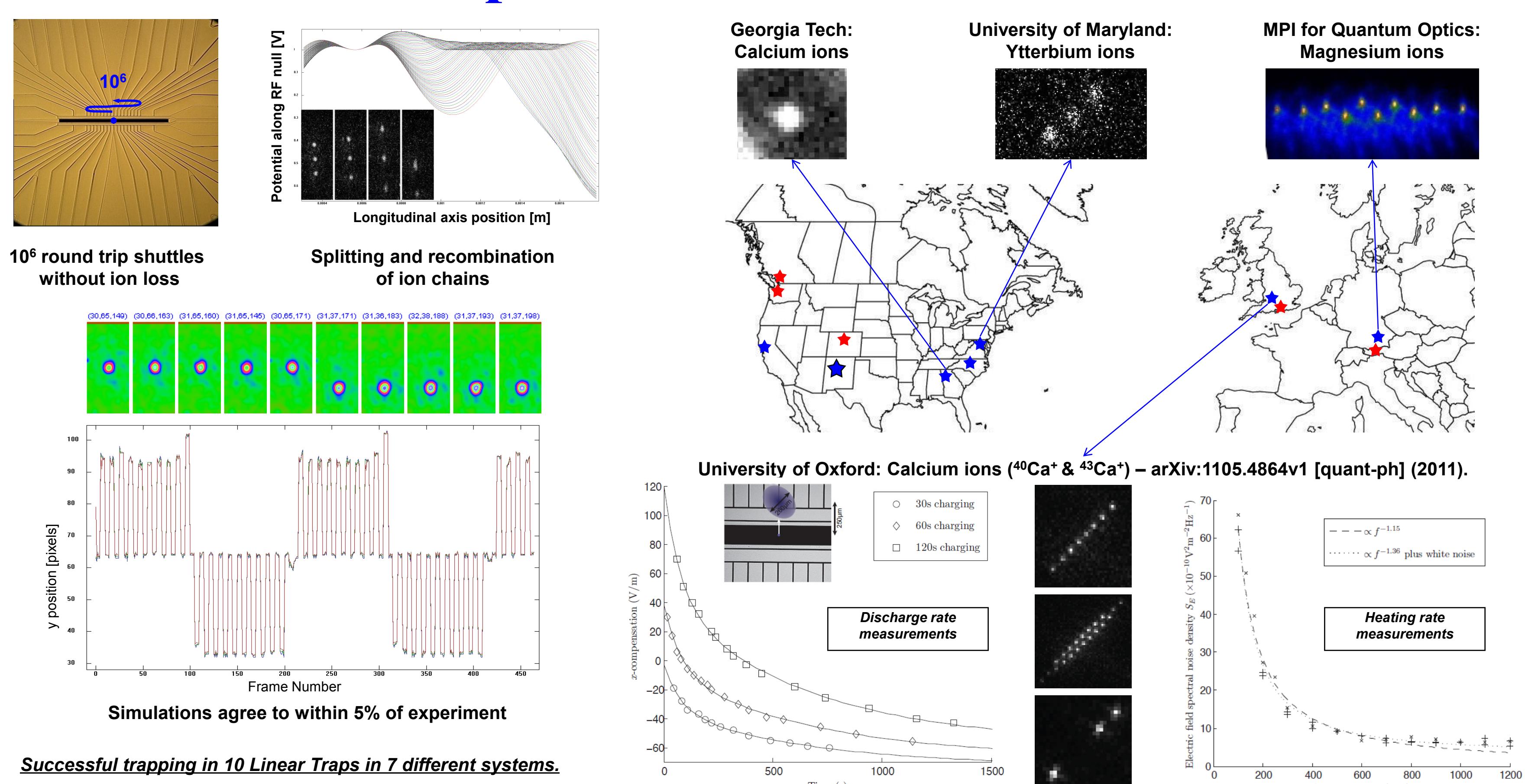
Ring Trap



Successful trapping & shuttling on first attempt. 1000s of complete loops completed

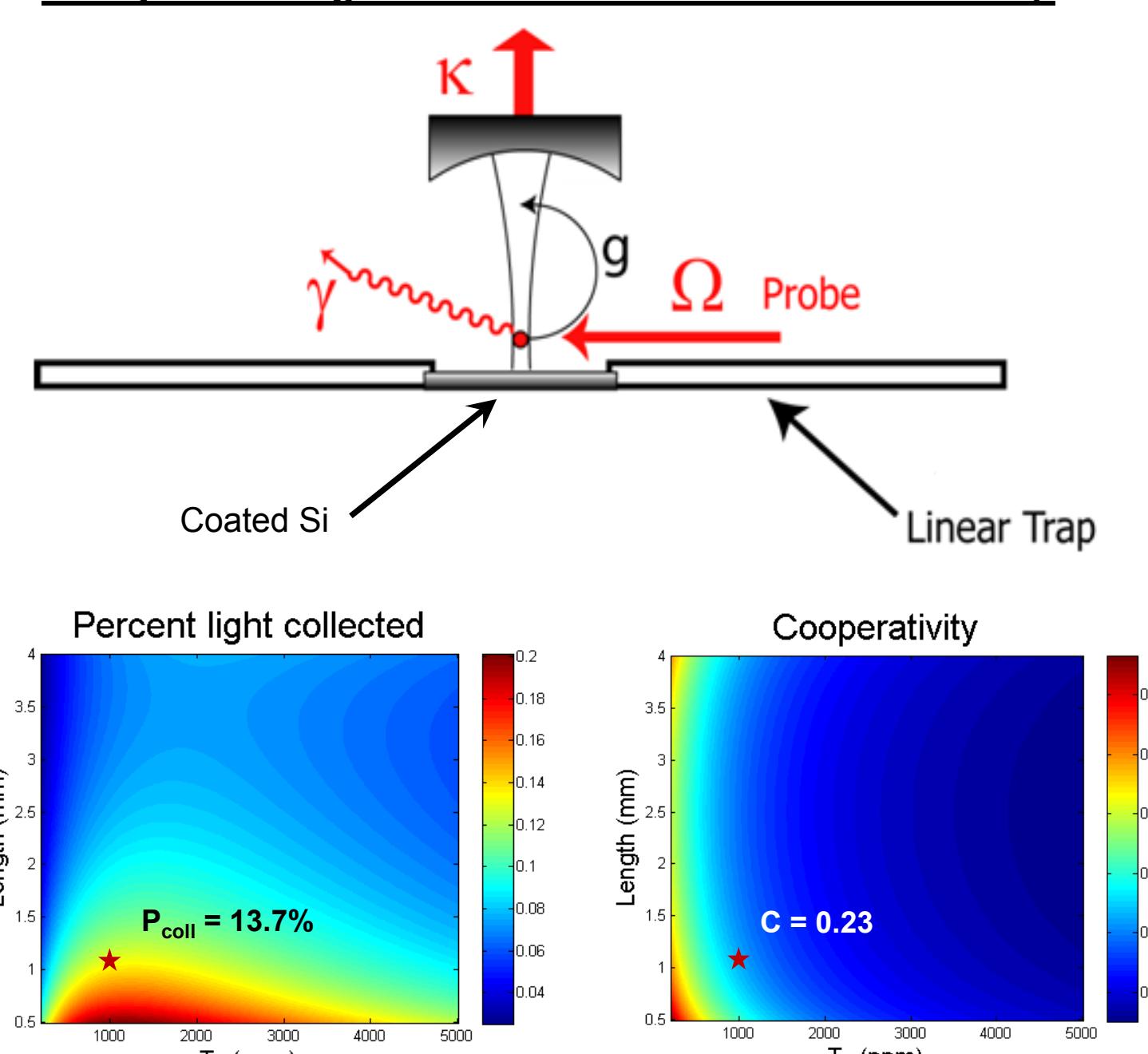


Linear Trap Results and Collaborations



Cavity QED and Integrated Optics

Cavity QED-Integrated Microfabricated Surface Ion Trap



New Linear Trap Design and Fabrication

