

# JLab SRF high-gradient program

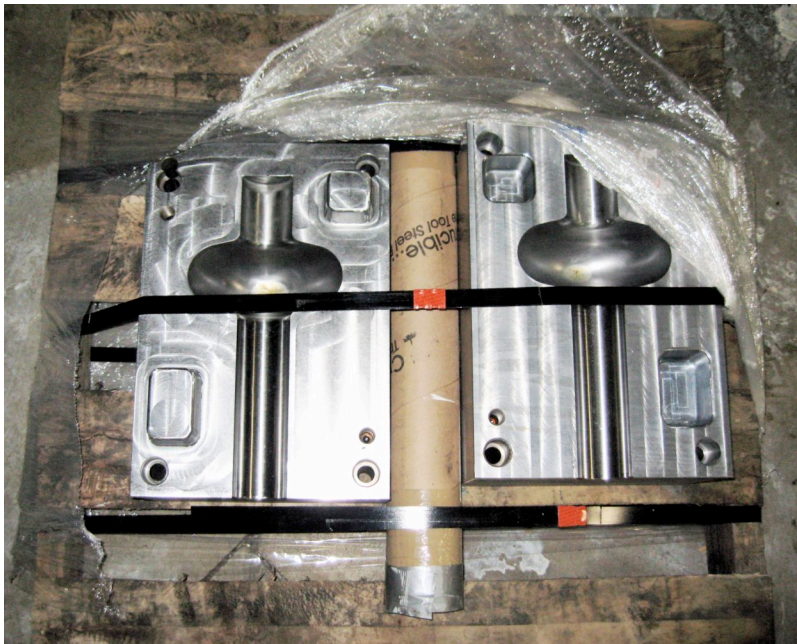
Bob Rimmer

# JLab SRF high-gradient program elements

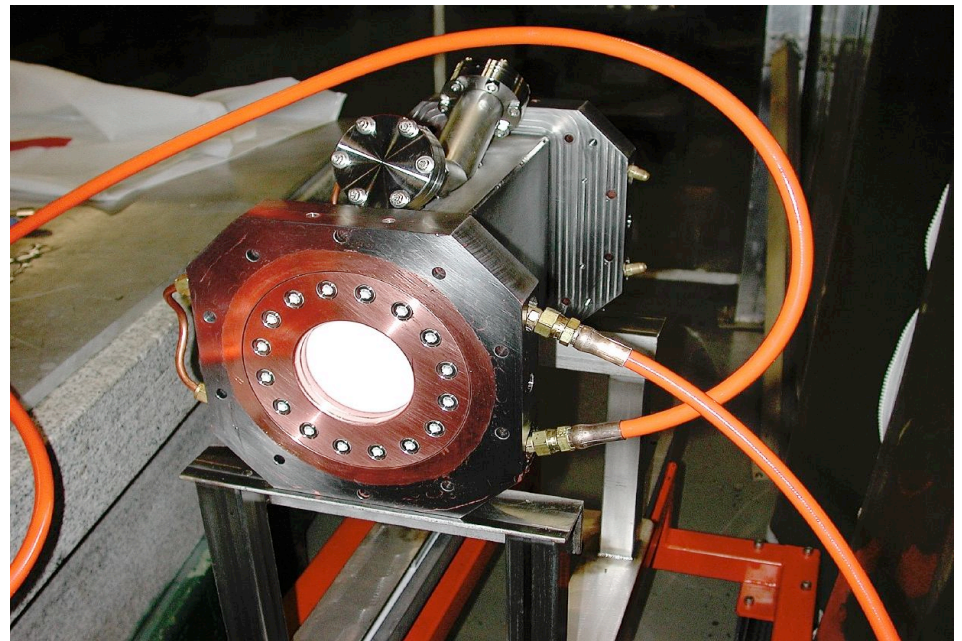
- Strong contributor to ILC S0 program
  - Ongoing “standard” 9-cell EP test cycles
  - New vendor qualification
  - Global exchange (ICHIRO)
- “ACD” activities on alternative materials and processes
  - Large grain/single crystal
  - Superstructure/superconducting joint
  - Alternative cleaning & processing methods
- Basic understanding
  - How does EP actually work?
  - What parameter set actually produces the best RF performance?
  - What are the origins of high-gradient non-quadratic losses?
  - What are the ultimate limitations in real 9-cell cavities?
- Cryomodule value engineering
  - Alternative cavity fabrication methods (die-less spinning/hydroforming)
  - Alternative power couplers

## Cryomodule “value engineering”

- 2 new US vendors identified
  - Hydroforming and die-less spinning
  - Proof-of-principle tests seeded with FY07 funds
- High-average power window being developed with FEL funds, can be adapted to 1.3 GHz



Hydroforming dies



Waveguide window