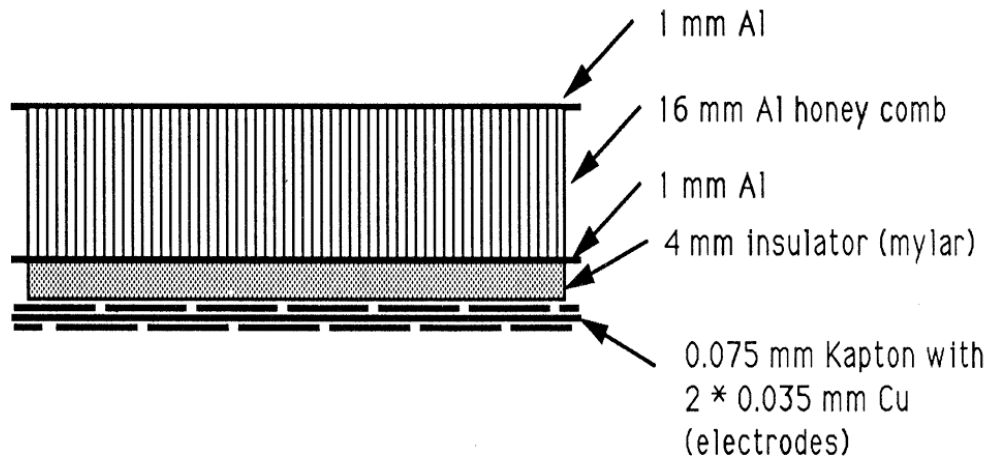


# Example field-cage structures

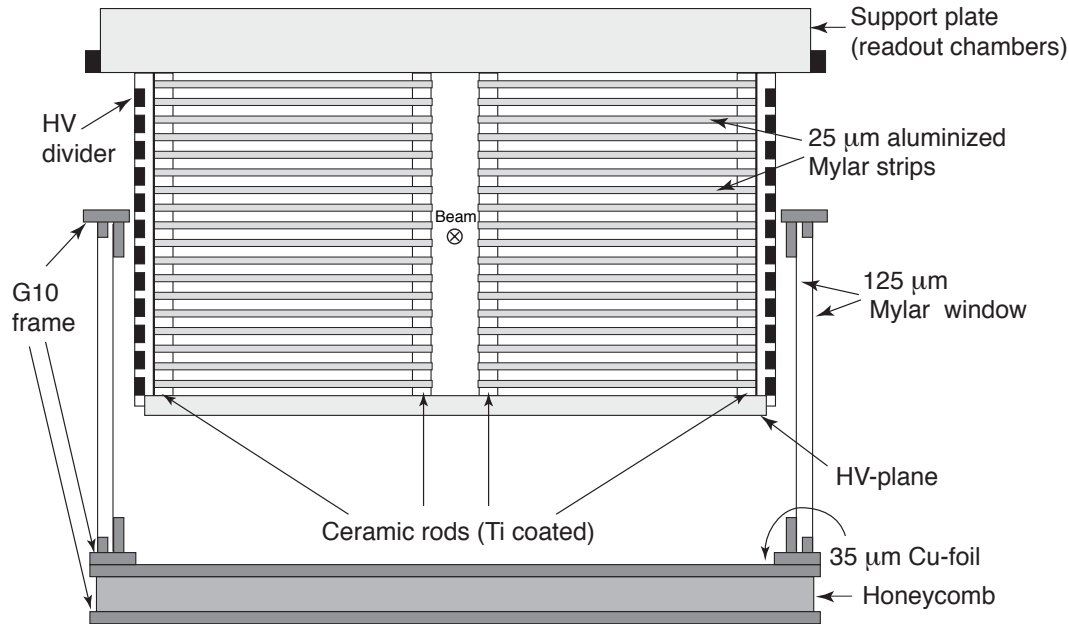
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# Aleph field-cage

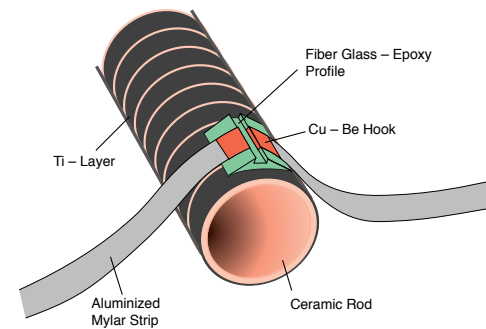
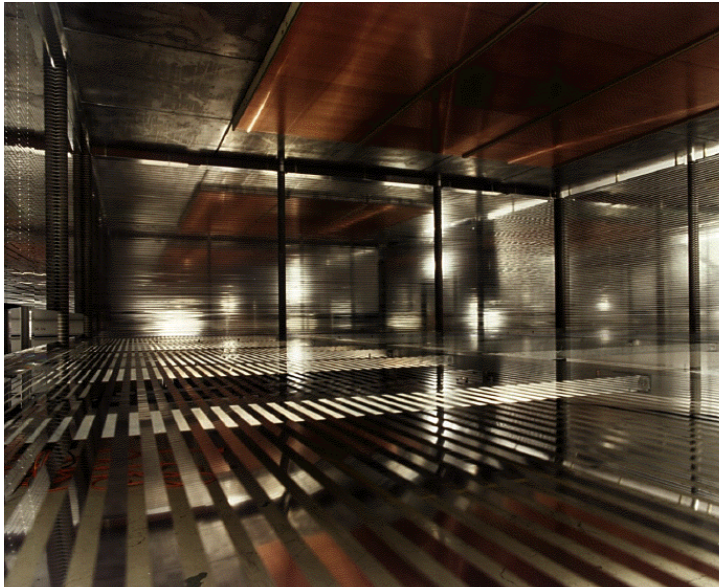


- Double layer of electrodes ( $35 \mu\text{m}$  Cu) separated by a Kapton foil ( $75 \mu\text{m}$ )
- 4 mm thick insulator, composed of 120 layers of mylar wound helically and glued together
- Aluminum honeycomb 16 mm thick and sandwiched between two 1 mm aluminum foils provides the self-supporting structure.
- The total thickness is  $\sim 2.2$  cm, 4.8 % of a radiation length.
- Drift length: 2.2m
- 110V/cm

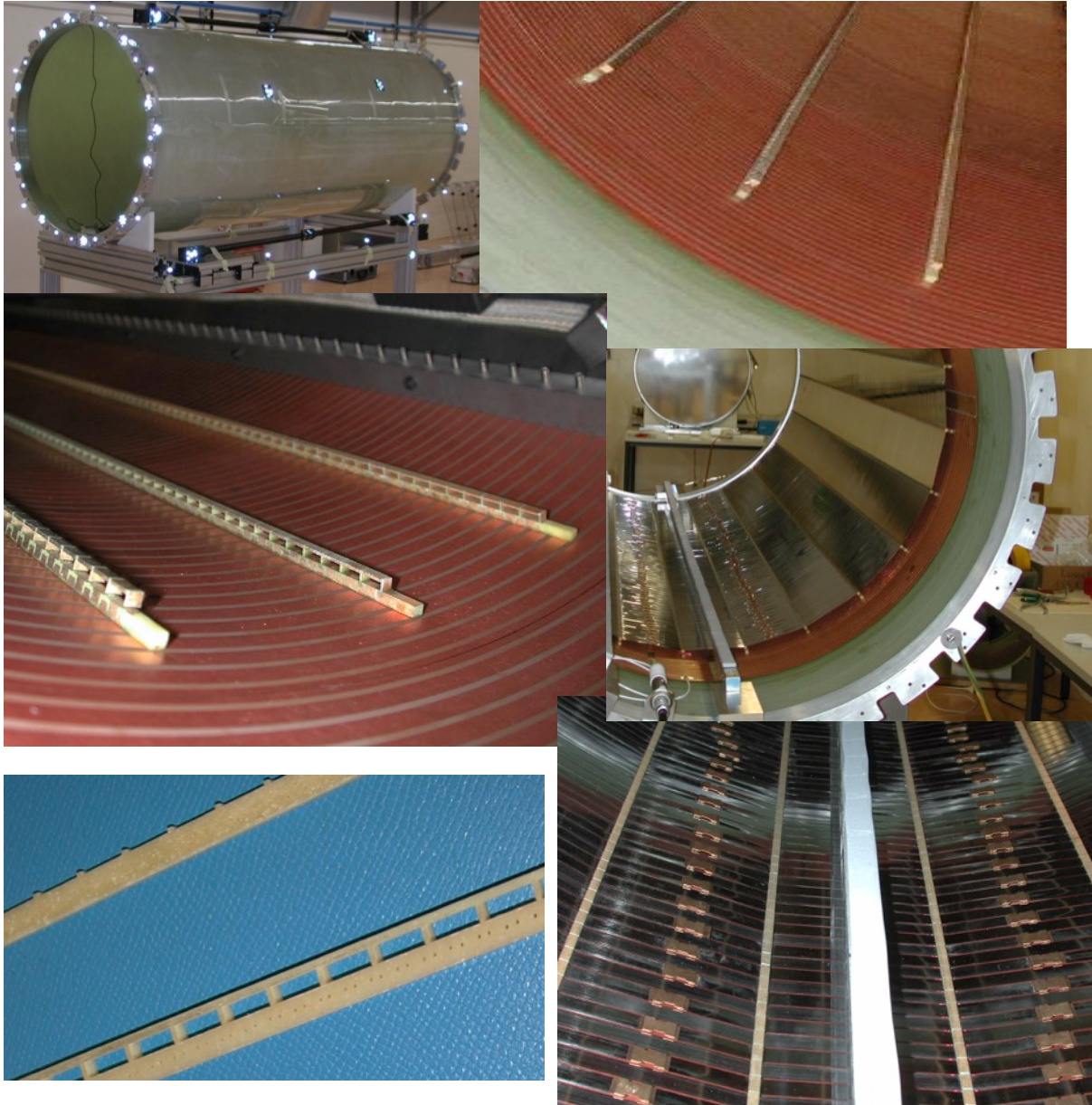
# NA 49 field-cage principles



- no insulator surfaces exposed to the drift volume
- single-layer electrostatic field structure made by mylar strips
- functional separation of field cage and gas envelope
- outside protective gas volume for gas purity and HV safety
- one-piece field structure hanging from the top



# merging the 2 concepts: HARP field cage



- Ar/CH4 90/10
- operated at 110V/cm but capable of up to 35kV
- 1.5m drift
- 8mm Stesalit cylinder (65% glass fiber / epoxy)
- Cu strips glued to Stesalit
- voltage divider with holes for Mylar strips
- staggered strips
- **extremely compact: < 2cm total thickness dead space**
- **uniform material layer**  
→ better for simulation/reconstruction