



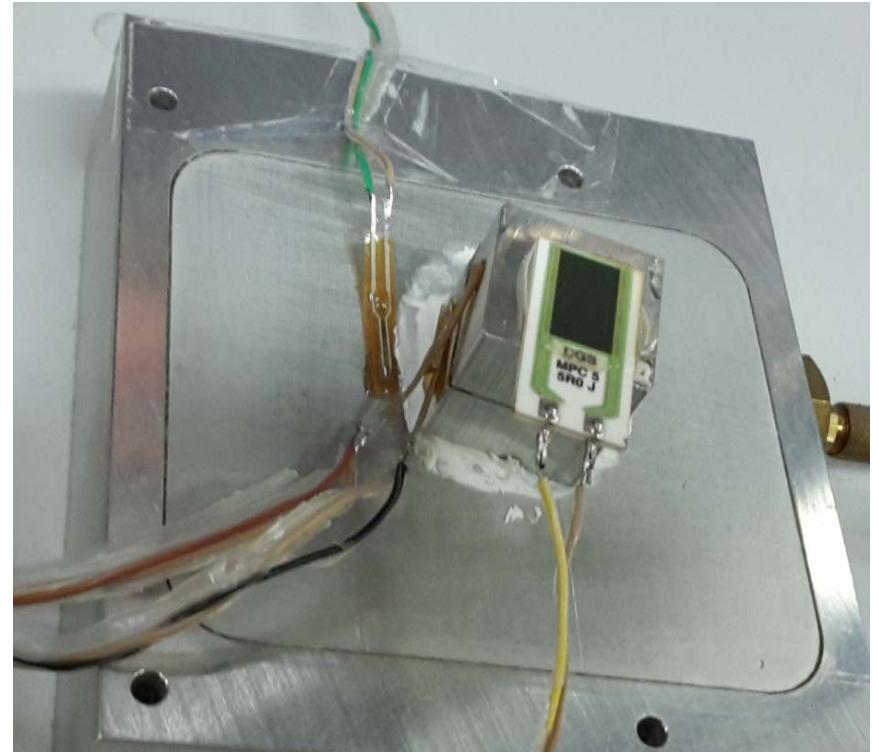
Cooling/ protection layer

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Nikhef/Bonn LepCol meeting
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Thermal conductivity glues

- Two aluminum plates 20 x 20 mm
 - Equipped with NTCs and one heater
- 1 mm wide gap filled with glue
- Heater power adjusted getting 15 C temperature difference between the plates
- Measurements
 - Araldite 2011: **2500 K/W.mm**
 - Araldite 2020: **2900 K/W.mm**
 - 1.3 ml Araldite 2020+ 0.69 g Boron Nitride: **760 K/W.mm**



Conductivity protection layer

- Measuring conductivity of SiNy layers produced by Yevgen (IZM)

- Only wafer 3 of dummy TPX3 (just silicon, no TPX3 structure)
- Other samples to follow

- Comparing with layer produced by Violeta (Dimes)

- **Violeta's layer has a 25 x higher conductivity**

- Said to be the highest conductivity possible

Conductivity (J/E) vs square root electric field ($E^{1/2}$)

substrate: 4 μm SixNy on TPX3 dummy W3 (Berlin)
substrate: 4 μm SiXN on 1 μm Al (049.1, Delft)
negative potential on layer surface
measured on August 15, 2016 and Feb 7, 2017
Fred Hartjes, Nikhef

