

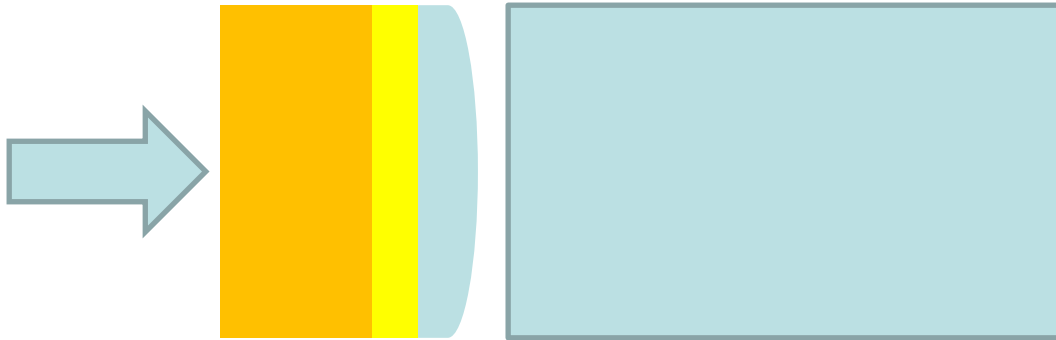
Test of optical cookie

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2013/3/21

- Optical contact between MCP-PMT and prism
 - No bubble (or small)
 - Can install after QBB assembling
 - Removable of PMT/frontend
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- Easy to put frontend by work even through access window

- Semi-cylindrical
- Use cookie with pushing MCP-PMT to prism
 - Air will remove when cookie deforms.
 - Flexibility against the movement of PMT
 - In grease case, air gaps happen when PMT is pulled even slightly.



Tested cookie material

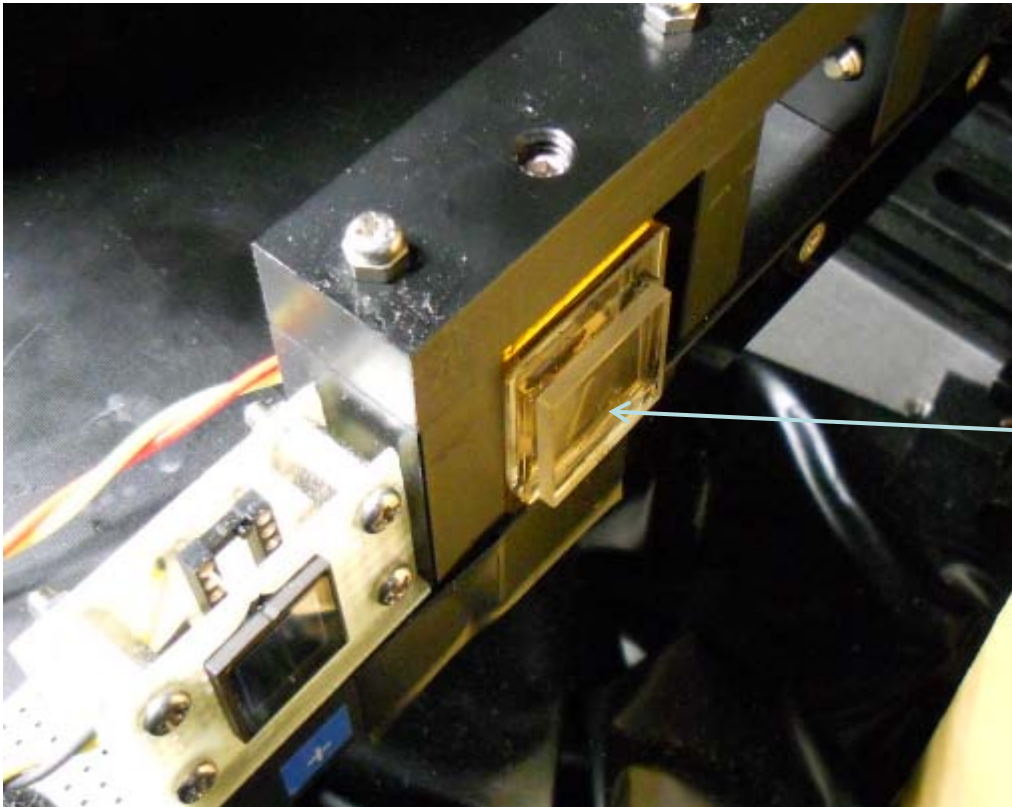
- TSE3032
 - Momentive Performance Materials Inc.
 - Two-component transparent silicone rubber
 - We can tune the hardness by changing the hardener rate
- Studied by KOTO experiment group (actually Osaka-u)
 - I just followed the instruction for the recipe

How to make



Transparency check

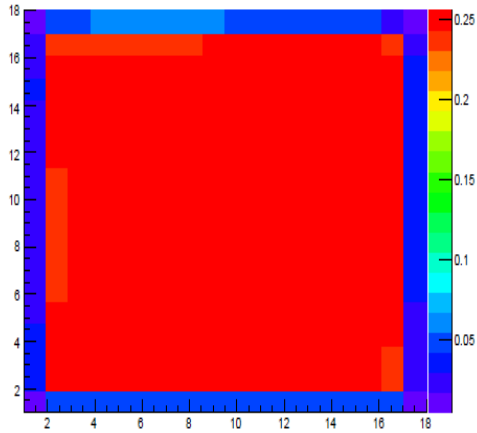
- 2mm thickness flat-flat surface prototype
- Using QE measurement system, put cookie and quartz



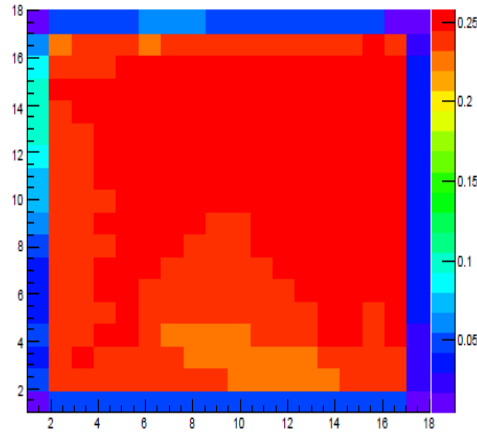
Air bubble

Transparency

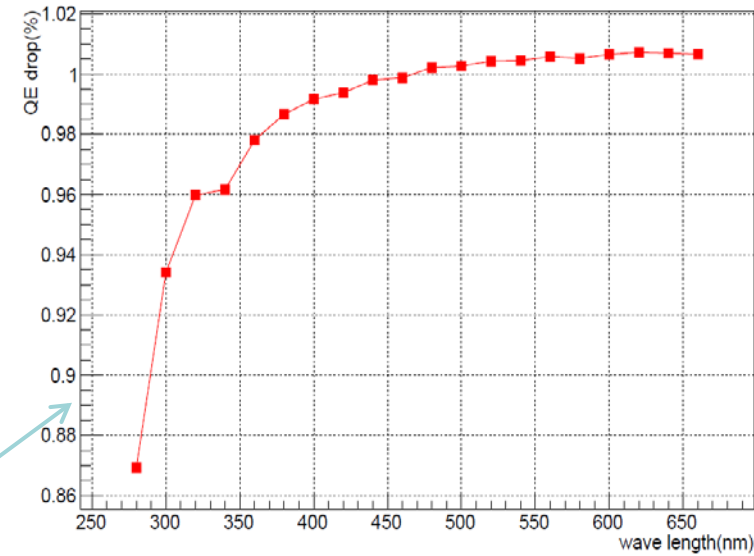
Before



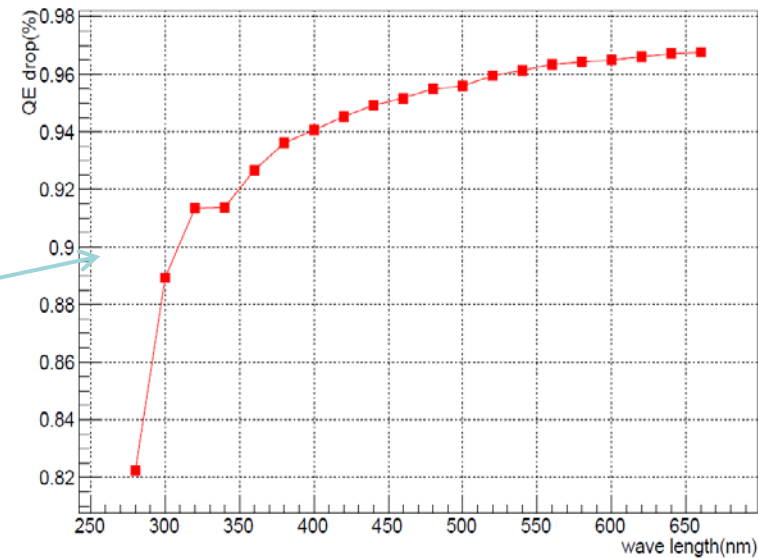
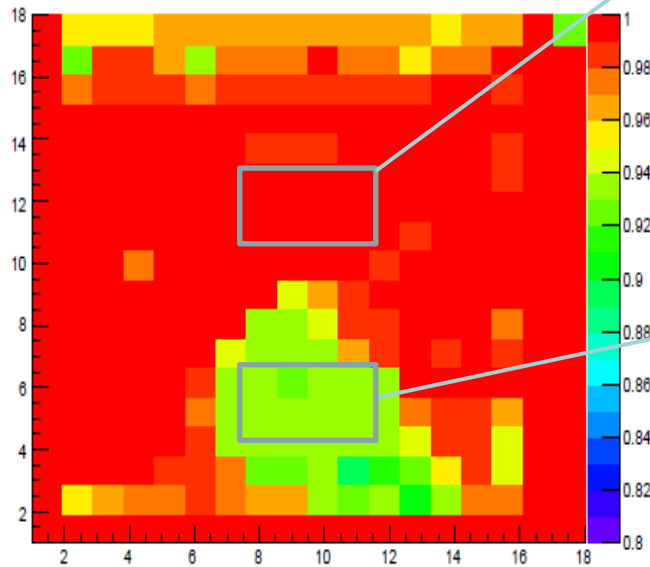
After



Graph



Ratio



- Initial test looks OK.
 - Transparency is acceptable.

- Next
 - Modify mold shape
 - Thinner shape (curvature)
 - Improve handling during production

- Further plan
 - Check the radiation hardness