

My work in 2015

10-1

Hiroki Tanaka

Indium welding

- We did by the same way as David-san did.
- We succeeded to weld two sapphire blocks by Indium.

Indium welding

4. Sapphire suspension

(4) Indium bonding

Halogen lamp works
(simple blocks)

We must
consider the
case with real
suspension.

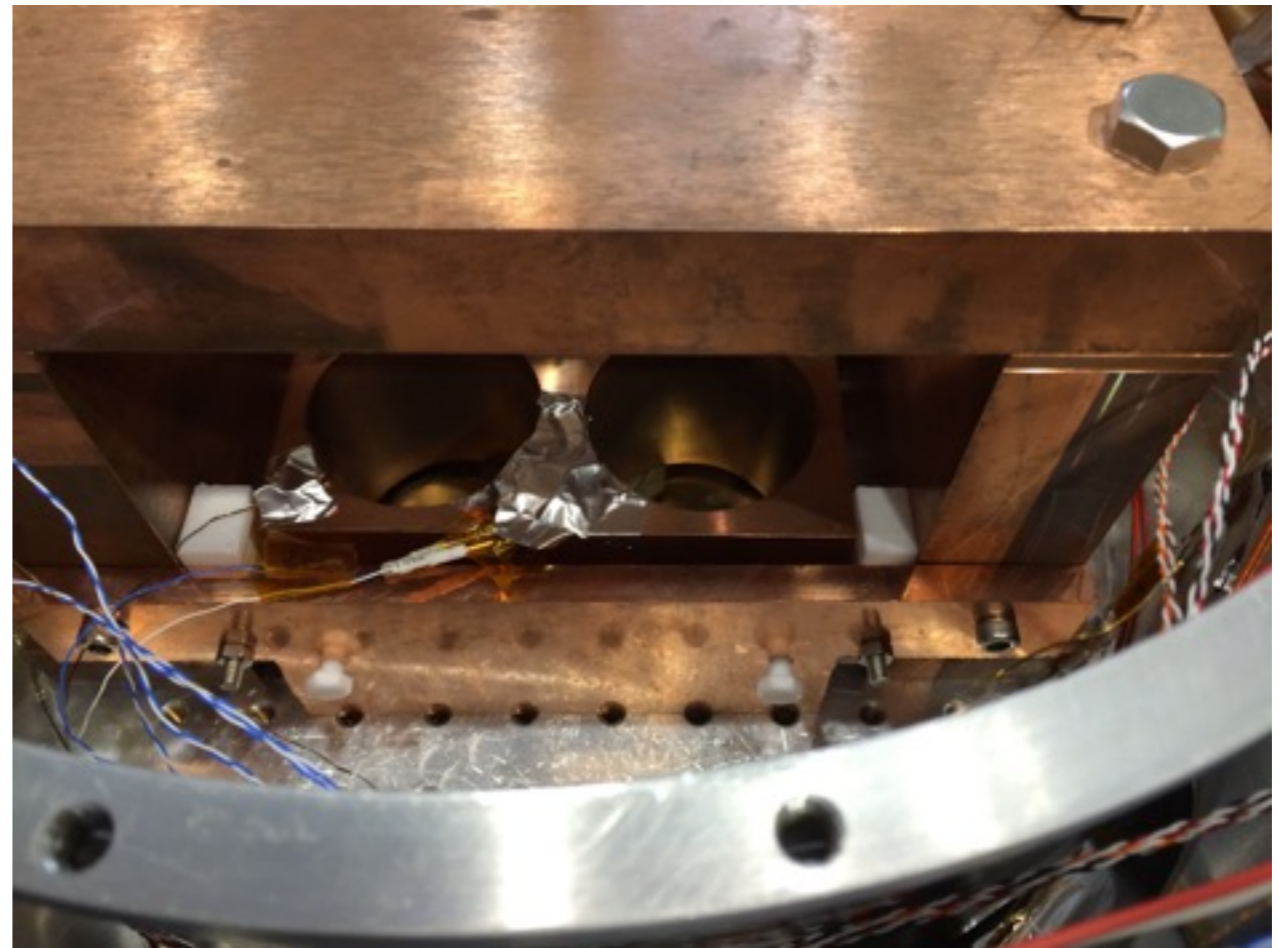
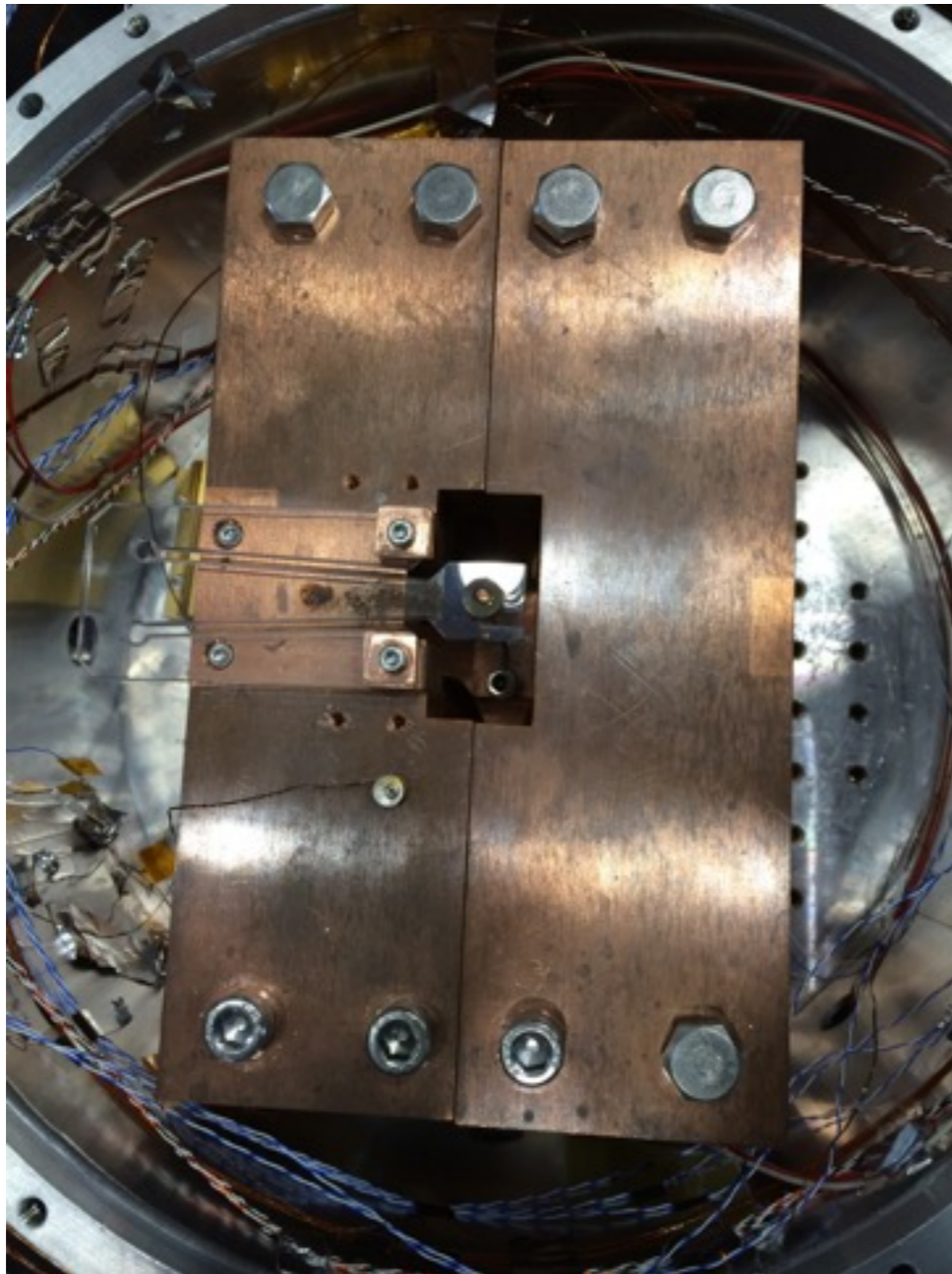


Indium

Sapphire block

David Vine, Mariela Masso Herrera, Karen Haughian, Peter Murray, Ronny Nawrodt (supported by ELITES)

One fiber prototype



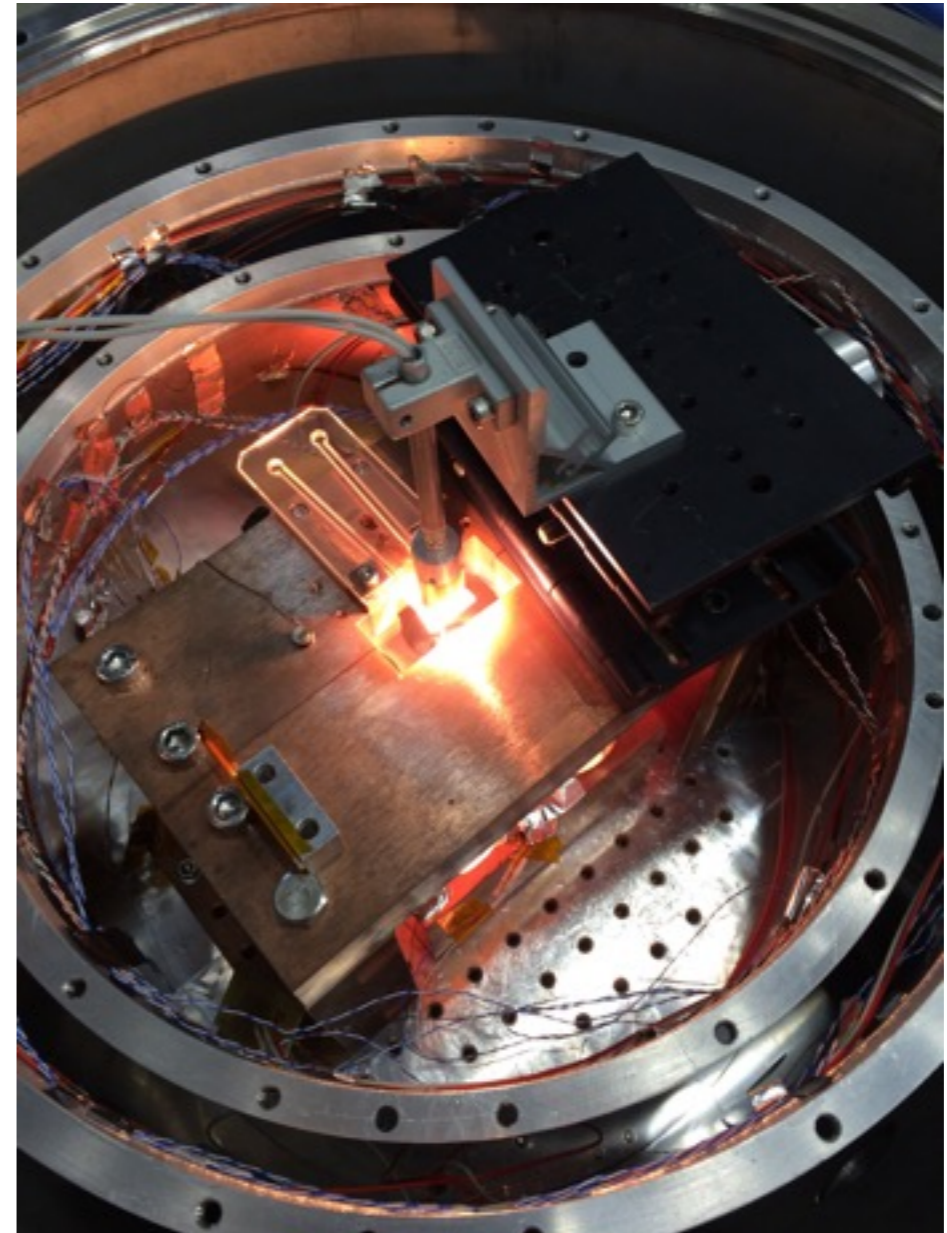
Indium welding

- We inserted the Indium between the fiber head and the blade.



Indium welding

- We tried to do the Indium welding, but the fiber head was not attached to the blade.

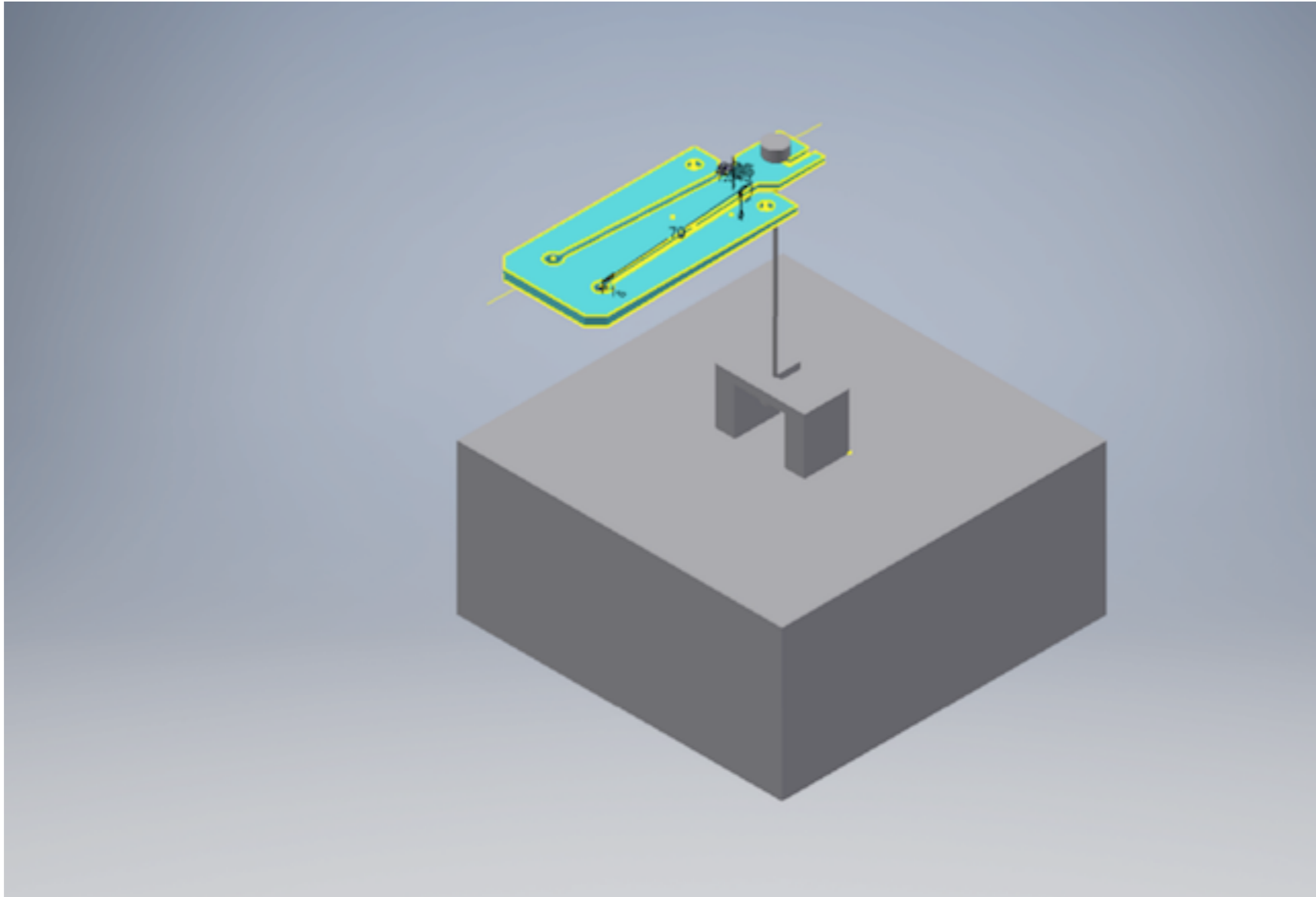


Indium welding

- We tried to do the Indium welding between the blade and the sapphire block.
- They were attached!



Ansys



Ansys

- I read the paper Rahul-san gave me last week.
- I will calculate the Q-value of the one-fiber prototype using the equation below.
- I calculated using the equation $\rightarrow D=3.8(\text{SENE}\cdots 24, \text{KENE}\cdots 68)$

$$\phi_{\text{total}}(\omega) = \frac{1}{D} \left(\frac{E_1}{E_{\text{total}}} \phi_1(\omega) + \frac{E_2}{E_{\text{total}}} \phi_2(\omega) + \cdots + \frac{E_n}{E_{\text{total}}} \phi_n(\omega) \right),$$

Future work

- We will continue the Indium bonding between the fiber head and the blade.
- We will calculate the Q-value of one-fiber prototype using Ansys.