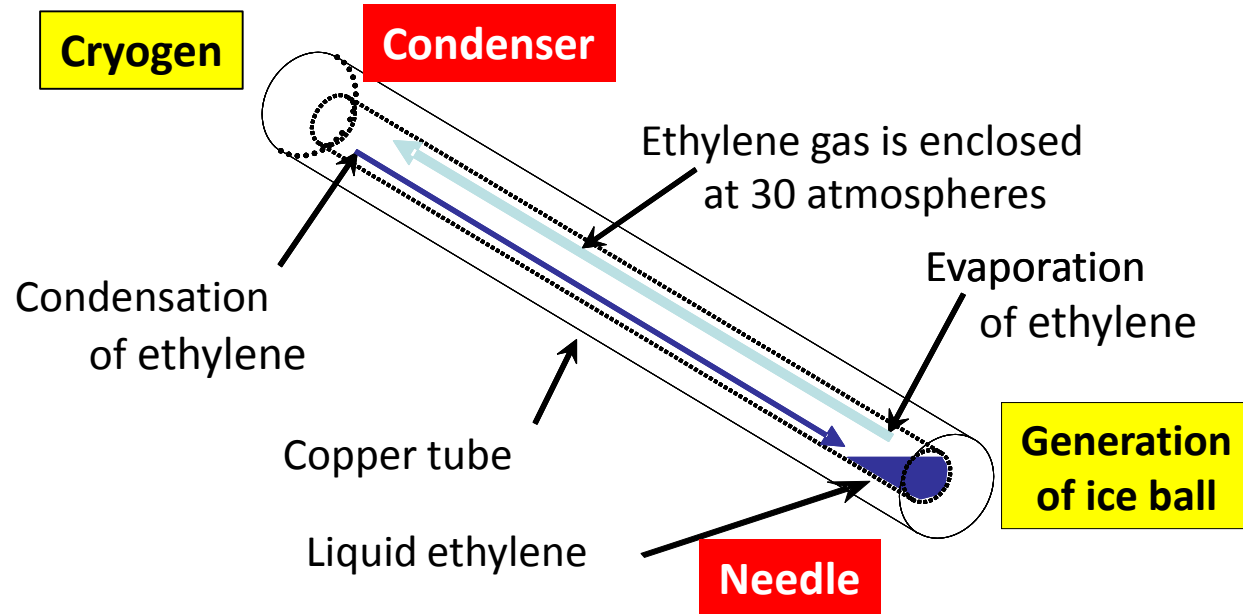


Developmental research on a cryosurgical probe with a thermosiphon effect and liquid nitrogen-cooled aluminum thermal storage blocks

- Cryosurgery is a minimally invasive treatment for certain types of cancers.
- Argon-based cryosurgical devices are available at present, however a large compressed gas cylinder with the pressure of 300 atmospheres is needed.
- To overcome these drawbacks, we developed a new cryosurgical probe measuring about 50 cm in length with separate lumens inside for liquid and gaseous ethylene to be used as a thermosiphon and liquid nitrogen-cooled aluminum thermal storage blocks.

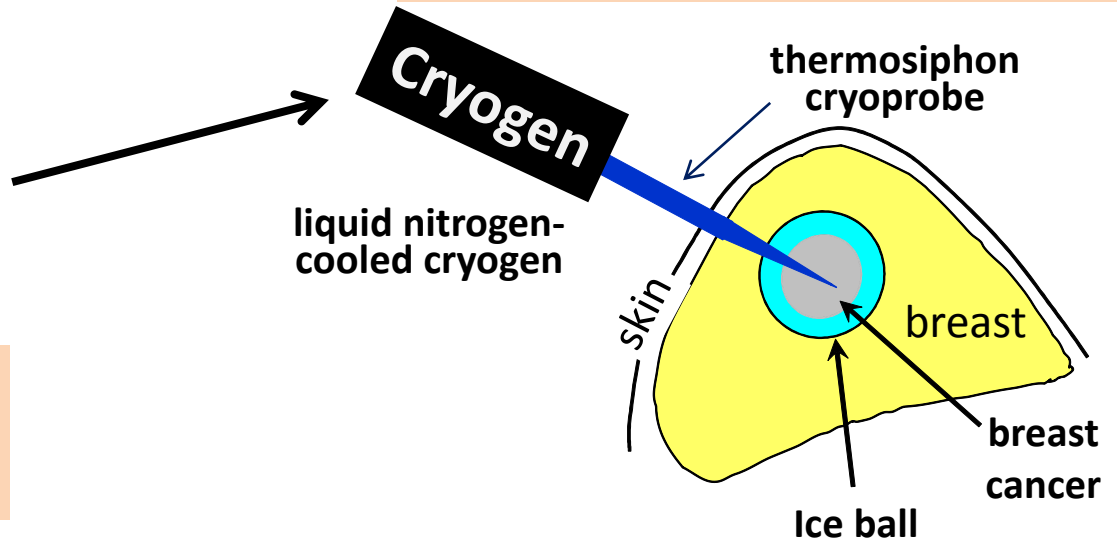
Concept of our research



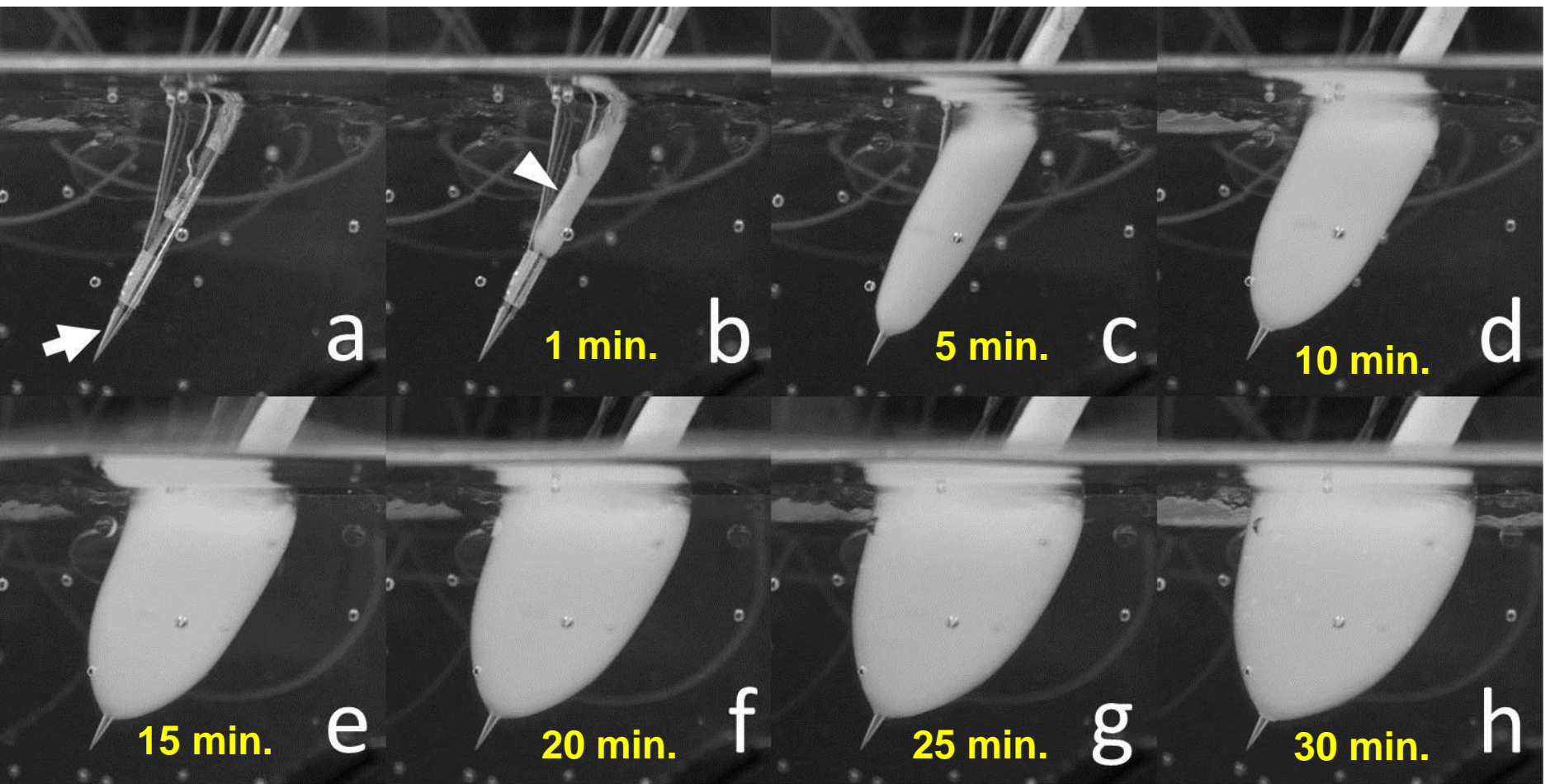
Thermosiphon cryoprobe

Aluminum
block cryogen

container of liquid
nitrogen



Thermosiphon cryoprobe and liquid nitrogen-cooled cryogen



Ice ball formation from the beginning to 30 min after cooling