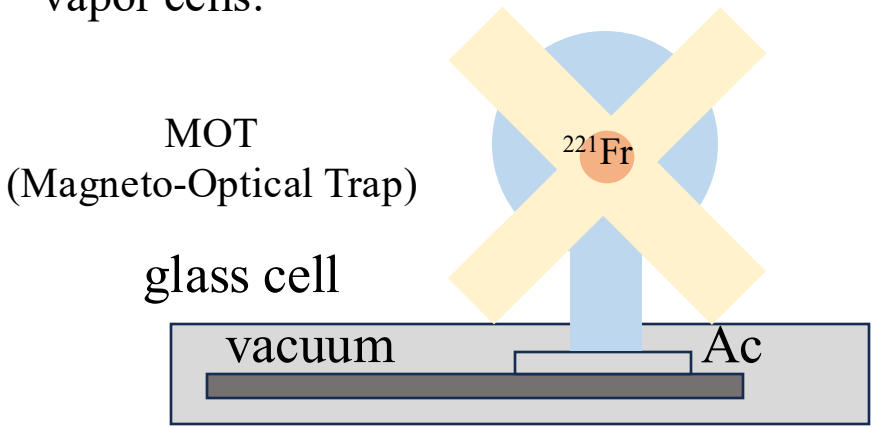
Study of temperature dependence of OTS coatings and optimization for trapping Fr

Fundamental physics (EDM/PNC) with cold ^{221}Fr atoms

A large number of ^{221}Fr in MOT is required

OTS (Octadecyl Trichloro Silane) coating

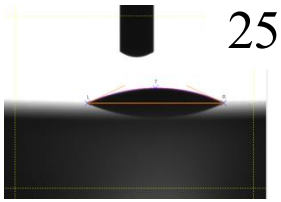
⇨ provides a surface layer that suppresses atom loss and improves trapping efficiency in vapor cells.



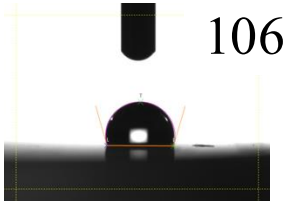
We investigated whether the OTS coating remains functional after exposure to high temperatures.

Contact angle measurement to check the surface of the glass cell

(1) Pre-OTS contact angle of glass substrate



(2) Before baking out (OTS-coated)



(3) After baking out (235 ℃, 24 h)