Experiments on Condensed Matter Nuclear Events in Kobe University

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Present studies in Kobe University

A. D(d,p)t reaction rate enhancement;

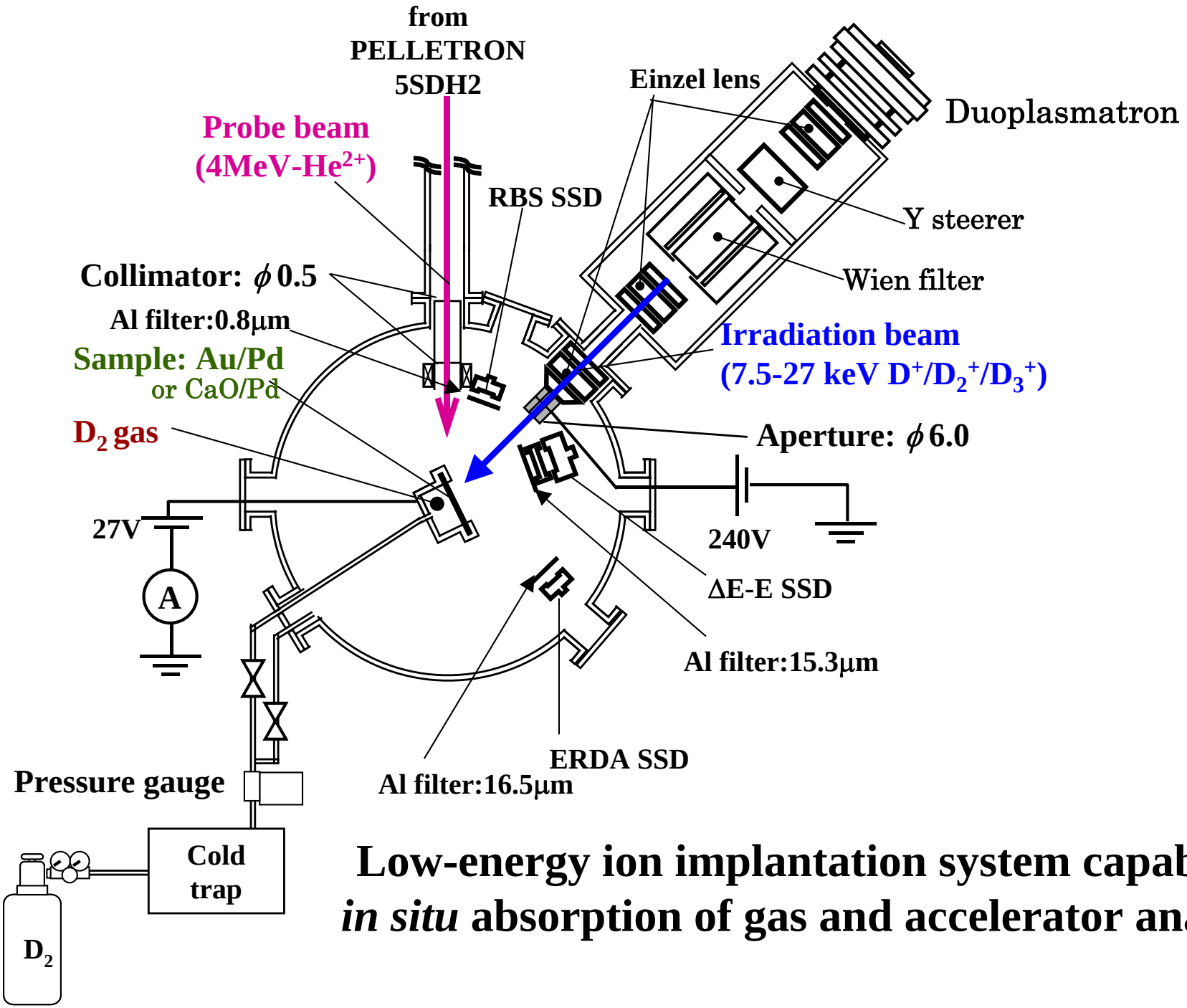
To investigate the deuterium reaction probability under various situations of samples irradiated with low-energy ion beams.

B. PIXE analysis of Pd complex under D_2 gas permeation;

To investigate the nuclear transmutations observed during deuterium permeation through palladium.

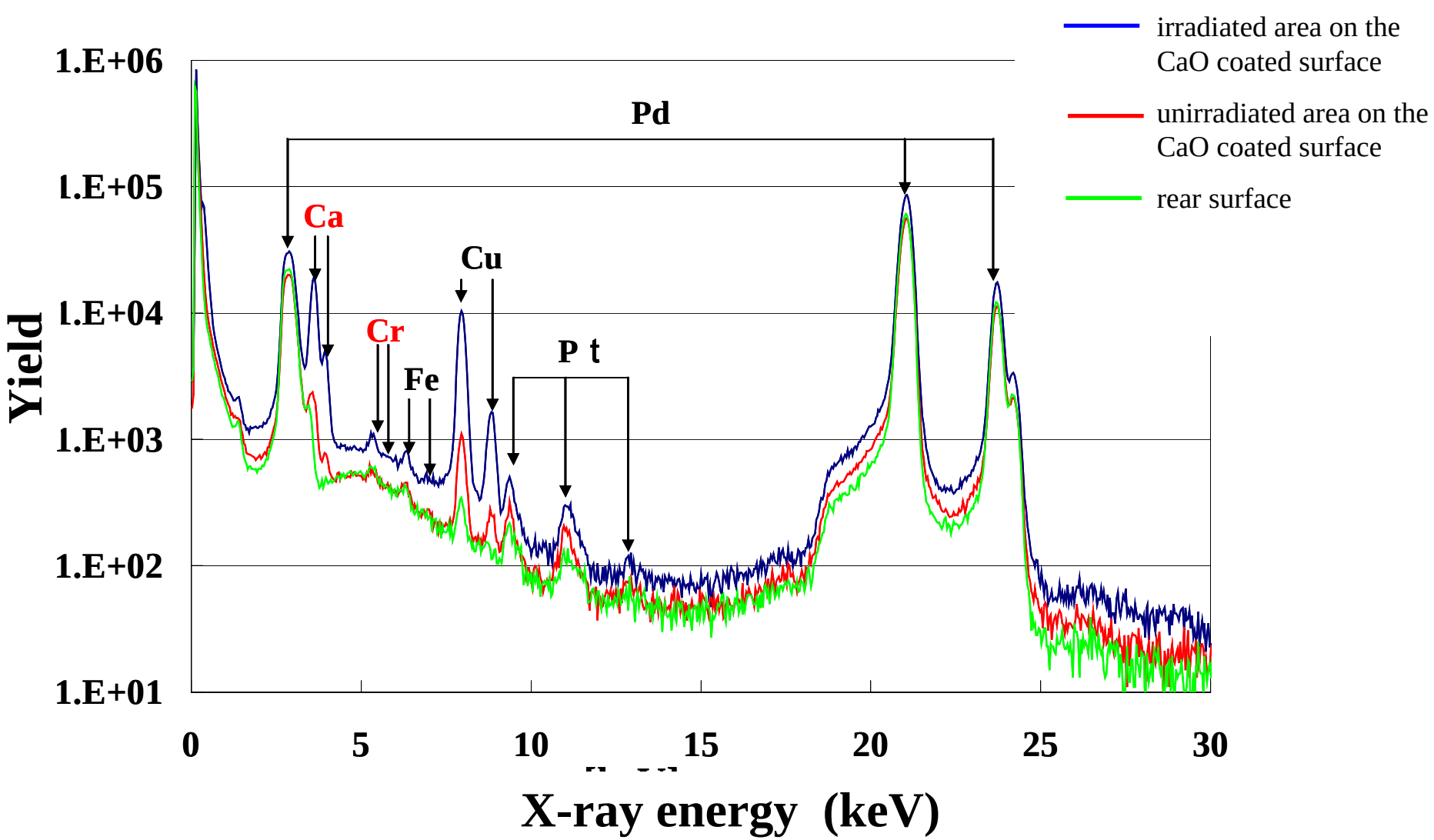
C. ^{7}Li(d,n2α) reaction rate enhancement in Liquid Li;

To confirm enormous enhancement of ^{7}Li(d.n2α) reaction rate in liquid Li.



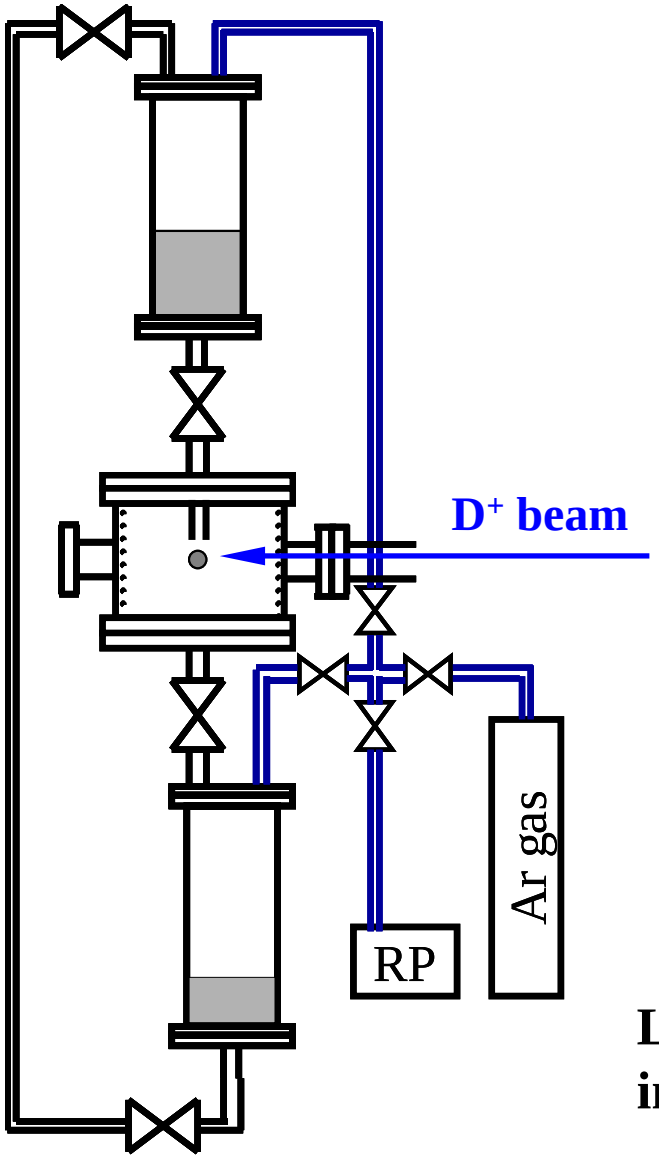
Low-energy ion implantation system capable of *in situ* absorption of gas and accelerator analyses

(Ca; 1E17 cm^{-2}, Cr ; 2E14 cm^{-2}, Cu; 3E16 cm^{-2})



PIXE spectra for irradiated, unirradiated and rear surface of the CaO/Pd sample after 20- and 12-keV D^+ irradiation

Liquid Li loop



- **Liquid Li can be repeatedly dropped using pressure difference instead of circulation pump.**
- **If the argon gas of high purity is used, nitridation and hydroxidation of lithium can be minimized.**

Low-energy ion implantation system capable of implant pure Li with D^+ ion beam.