

Penning Gauge Spectroscopy

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1. Objective

Measure the partial pressures of hydrogen (H_2) and helium (He) or deuterium (D_2) and helium (He).

Measure the partial pressures of hydrogen (H_2) and deuterium (D_2).

2. Apparatus

- penning gauges are installed on 2.5U, 3I, 9I, and 7O (see Fig. 1)
- the 7O system is prepared for the partial pressure measurement of H_2 and D_2
- the other systems are for the partial pressure measurement of H_2/D_2 and He

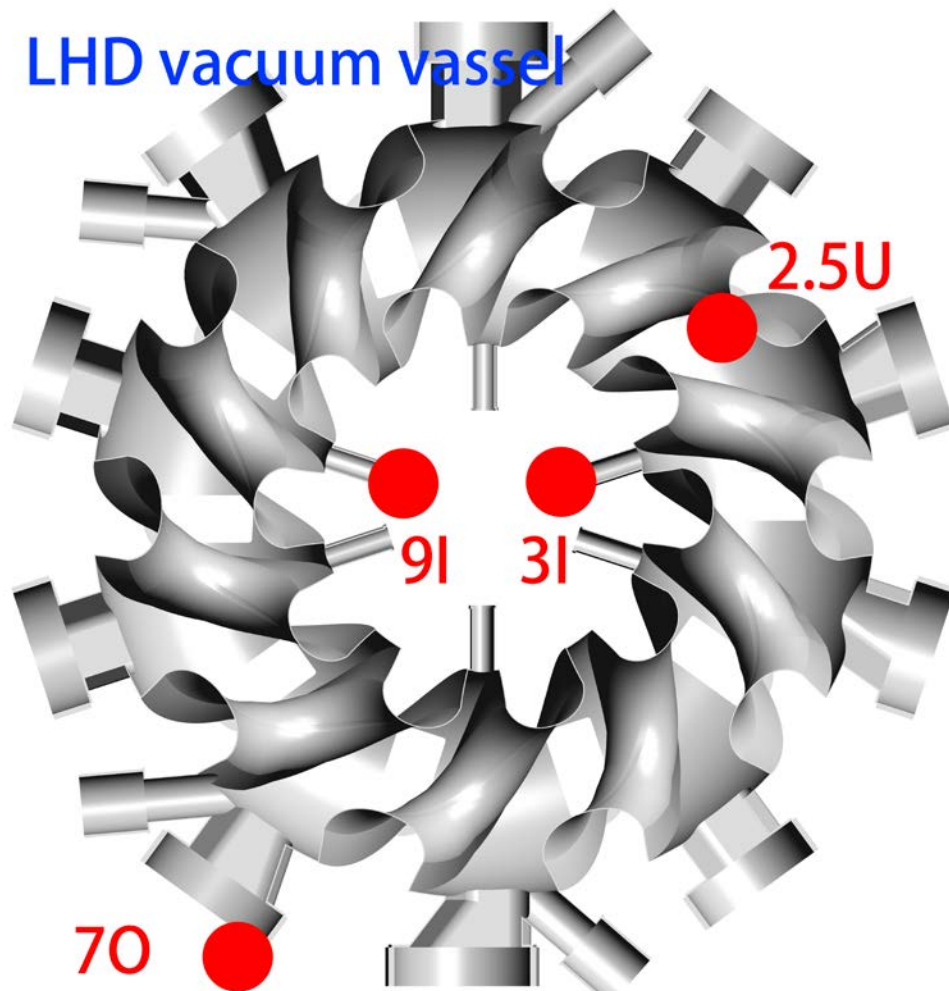


Fig. 1. Locations of the penning gauge spectroscopy systems.

3. Operation

The system can be operated when the high voltage power supplies are turned on.

The pressure of the vacuum vessel should be under 1 Pa.

The effects of the magnetic field strength is not large when $B \geq 0.5$ T.

4. Available data

4.1 Kaiseki-data server

The data will be registered on the Kaiseki-data server.

5. Remarks

Calibration by filling the vacuum vessel with H₂, D₂ or He under the existence of the magnetic field is needed.

Calibration for the ratio of H₂ and D₂ should be needed.

References

[1] H. Funaba, M. Kobayashi *et al.*, Conference of the European Physical Society EPS 2012, Stockholm, P4.062.