

Spectroscopic Studies of Hydrogen Plasma Magnetic Bombardment Device on Palladium Surface

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Spectroscopy studies of hydrogen atoms interaction, behavior and reflection on palladium surface in a magnetic bombardment device are being investigated in this research. Palladium is a distinctive material with a strong attraction with hydrogen due to its good absorbing and catalytic properties. [1] Palladium has a possibility to take part in the projected hydrogen economy, including hydrogen purification, storage, detection, and fuel cells. [2]

A magnetized hydrogen-plasma bombardment device contains the palladium on the target holder positioned at 45 degrees. Different bias voltage and discharge currents will be applied to observe and study the reflection of the hydrogen atoms on the palladium surface. The H α emission spectrum is measured using a Czerny-Turner monochromator spectrometer. An optical lens will be positioned ex-situ the plasma to govern light to the detector.

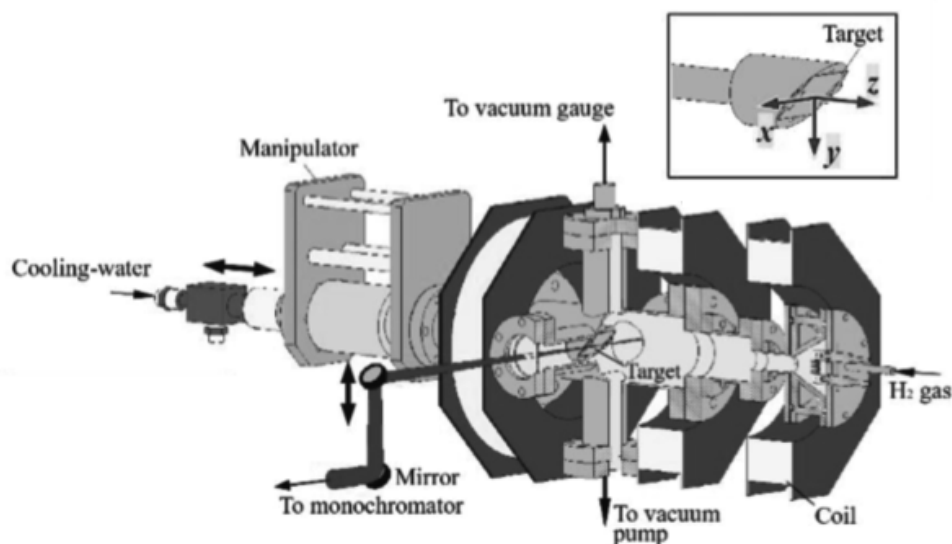


Figure 1: Hydrogen plasma bombardment device and optical view from the monochromator

Reference:

- [1]. S. Konda et.al. Materials Today 2016, 19, 100-108
- [2]. F. Valencia et.a; J. Phys. Chem. C 2016, 120, 23836–23841