

Non-Evaporable Getters Plasma Activation Study

Thursday, November 14, 2024 9:00 AM (20 minutes)

Non-evaporable getters (NEG) are widely used in ultra-high vacuum (UHV) systems to improve vacuum quality by adsorbing gas molecules like hydrogen and carbon monoxide, which are commonly present in such systems. To function as a vacuum pump, NEG requires activation through specific processes. Traditionally, activation has been achieved by heating the NEG to high temperatures over extended periods, limiting its use to certain devices. In this study, we activated a commercial NEG pump (ST707 strip 30D, SAES Getters) using Krypton DC discharge plasma. Plasma activation was performed at lower temperatures and in a shorter time compared to thermal activation. We measured the pumping speeds for hydrogen and carbon monoxide under different activation conditions using the throughput method. The results show that the plasma-activated NEG pump has comparable pumping speeds to the heat-activated pump, with slightly higher pumping capacity observed in the plasma-activated case. In this presentation, we will discuss the experimental methods and results in detail.

Paper submission Plan

No

Best Presentation

Yes

Contribution track

ICABU WG1. Accelerator Systems

Primary author: BAE, Sehyun (Pohang University of Science and Technology (POSTECH))

Co-author: Dr HA, Taekyun (Pohang Accelerator Laboratory (PAL))

Presenter: BAE, Sehyun (Pohang University of Science and Technology (POSTECH))

Session Classification: ICABU WG1

Track Classification: ICABU: ICABU WG1. Accelerator Systems