Contribution ID: **1709** Contribution code: **THPB082** Type: **Poster Presentation**

INVESTIGATION ON THE VACUUM PROPERTIES OF AL - TIZRV BI-LAYER FILMS

Thursday 5 June 2025 15:30 (2 hours)

Maintaining an ultra-high vacuum (UHV) environment is essential for the Hefei Advanced Light Facility (HALF) to achieve its design performance. Owing to the dimensional limitations imposed by small-aperture vac-uum chambers, non-evaporable getter (NEG) films are commonly applied to the inner walls to enhance vacuum performance. However, conventional NEG films increase the resistive-wall impedance of the vacuum pipes, there-by exacerbating the wakefield effects. To address this problem, a novel composite film, Al-TiZrV, has been developed. By covering the TiZrV film surface with a highly conductive film, it can reduce the resistivity of the composite film. The results show that while the addi-tion of the Al layer reduces the resistivity significantly, it increases the secondary electron yield (SEY), exacerbat-ing the electron cloud effect. This study provides insights into the complex properties of similar bilayer films for future research on accelerator-related materials.

Footnotes

Paper preparation format

Word

Region represented

Asia

Funding Agency

Author: JIN, Xinyu (University of Science and Technology of China)

Co-authors: GUO, Tao (University of Science and Technology of China); XU, Xiaopeng (University of Science and Technology of China); MA, Wenjing (University of Science and Technology of China); ZHOU, XueSong (University of Science and Technology of China); FAN, Le (University of Science and Technology of China); HONG, Yuanzhi (University of Science and Technology of China); WANG, Sihui (University of Science and Technology of China); DONG, Shaoxiang (University of Science and Technology of China)

Presenter: DONG, Shaoxiang (University of Science and Technology of China)

Session Classification: Thursday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T14 Vacuum Technology