



Contribution ID: 1479 Contribution code: TUPR21

Type: **Poster Presentation**

Influence of deposition parameters on structures and vacuum properties of NEG coated vacuum chamber

Tuesday, 21 May 2024 16:00 (2 hours)

The non-evaporable getter (NEG) coatings provide not only conductance-free evenly distributed pumping and low thermal outgassing rates but also photon- and electron-stimulated desorption and second electron yield. NEG coatings are considered pivotal for attaining ultrahigh vacuum in fourth-generation diffraction storage ring vacuum systems. TiZrV thin films were deposited onto elongated CuCrZr pipes for this investigation. The influence of various deposition parameters on the NEG coatings was investigated. The micro-structure, surface topography, roughness, and phase composition were evaluated using Scanning Electron Microscopy, Energy Dispersive Spectroscopy, X-ray Diffraction, and Atomic Force Microscope, respectively. Additionally, the activation performance of the TiZrV films was investigated in relation to deposition parameters.

Footnotes

Funding Agency

Paper preparation format

Word

Region represented

Asia

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Session Classification: Tuesday Poster Session

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