Contribution ID: 273 Contribution code: THPB080

Particle measurement on all-metal gate valve for CEBAF beamline via laser-based particle counter

Thursday 29 August 2024 16:00 (2 hours)

The Viton gate valves installed in the CEBAF beamline have significantly degraded after long-term operation in a radiation environment, generating numerous particles that cause heavy contamination and strong field emission. As a replacement, all-metal gate valves have been proposed for installation in the CEBAF beamline. In this paper, we present thorough comparison tests between the Viton gate valves and the all-metal gate valves, including evaluations of particle levels, aging tests of the gate valves, and analysis of the particle material.

Footnotes

Funding Agency

Author: Dr GE, Mingqi (Thomas Jefferson National Accelerator Facility)

Co-authors: VALENTE-FELICIANO, Anne-Marie (Thomas Jefferson National Accelerator Facility); RUBER, Roger (Thomas Jefferson National Accelerator Facility); GENG, Rong-Li (Thomas Jefferson National Accelerator Facility); BALACHANDRAN, Shreyas (Florida State University); POWERS, Tom (Thomas Jefferson National Accelerator Facility)

Presenter: Dr GE, Mingqi (Thomas Jefferson National Accelerator Facility)

Session Classification: Thursday Poster Session

Track Classification: MC4: Technology: MC4.8 Superconducting RF