



Contribution ID: 223

Type: Oral presentation (remote)

Plasma processing development for SPIRAL2 quarter-wave resonators: experimental and simulation studies

Wednesday 10 July 2024 15:00 (20 minutes)

Plasma processing stands as an in-situ technique for mitigating field emission and multipacting effects in the long-term operation of superconducting accelerating cavities. While extensively explored and applied to elliptical cavities, its application to quarter-wave resonators (QWRs) represents a relatively recent area of investigation. At IJCLab, ongoing efforts focus on refining plasma processing techniques tailored for SPIRAL2 QWRs. This talk will center on our experimental findings, compared with numerical simulations of a simplified system featuring 2D axisymmetric geometry and employing a basic plasma chemistry composed of pure argon, instead of Ar/O₂(10%). This strategic simplification makes it possible to reduce the calculation time while also providing an understanding of the dynamics of the plasma within the cavity. The simulations have been conducted using COMSOL Multiphysics.

Apply for poster award

Primary author: CHENEY, Camille (IJCLAB)

Presenter: CHENEY, Camille (IJCLAB)

Session Classification: Superconducting RF

Track Classification: Accelerator: Superconducting RF