Further development is needed to address this issue by changing it is possible to control the plasma and power distribution separately for the inner and outer part of cavity and thereby potentially improve film uniformity throughout the cavity and coating duration. In this study a comparison between the deposition rates obtained using a single cathode and a double cathode using Direct Current (DC)-bias diode sputtering, DC-magnetron sputtering (DCMS) and Pulsed DC-magnetron sputtering (PDCMS) is presented. The morphology of the thin film samples were compared using Focused Ion Beam (FIB) cross section milling and Scanning Electron Microscopy (SEM) analysis.

The Quarter Wave Resonator (QWR) cavities for HIE-ISOLDE project at CERN have entered their ending phase of production. Some R&D is still required to improve the uniformity of the Nb layer thickness on the cavity surface. In order to improve this behaviour one approach which has been proposed is to replace the single cathode with a double cathode and test the suitability of different deposition techniques. With this change it is possible to control the plasma and power distribution separately for the inner and outer part of cavity and thereby potentially improve film uniformity throughout the cavity and coating duration. In this study a comparison between the deposition rates obtained using a single cathode and a double cathode using Direct Current (DC)-bias diode sputtering, DC-magnetron sputtering (DCMS) and Pulsed DC-magnetron sputtering (PDCMS) is presented. The morphology of the thin film samples were compared using Focused Ion Beam (FIB) cross section milling and Scanning Electron Microscopy (SEM) analysis.

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