

thinfilms and NEW IDEAS for SRF

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RF characterization of thin films at Cornell

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A TE mode niobium sample host cavity was used to characterize the RF performance of large 5" diameter thin film samples at 4 GHz. Exciting results were obtained from industry partner Ultramet's CVD Nb₃Sn grown on a copper substrate. These results indicate that slight alterations to the deposition process and use of higher purity precursors could lead to high-performance Nb₃Sn coatings on copper, which would be a breakthrough accomplishment. In addition, encouraging RF measurements for bi-layer ALD NbN-Nb and ALD multilayer NbN-AlN-Nb, obtained from industry partner Veeco-CNT, were obtained. These initial results demonstrate the potential of ALD and CVD for use in SRF cavities.

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