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Evaluation of DLC (diamond-like carbon) Coating on Multipactor Suppression

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Multipactor discharges in dielectric accelerating structures are a major limitation on the performance of this otherwise very promising technology for future high energy physics machines and other applications. Multipactor occurs when the Secondary Emission Yield (SEY) of the dielectric material used in accelerating structures is significantly higher than 1. In this work, we evaluated the effect of SEY reduction by means of amorphous Carbon (a-C) and Diamond-Like Carbon (DLC) coatings for different dielectric materials. We also report on the testing results for a DLC coated low energy dielectric accelerator.

Acknowledgments

Primary author: JING, Chunguang

Presenter: JING, Chunguang

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