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LASE surfaces for the mitigation of the Electron cloud in positively charged accelerators

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The formation of an electron cloud is an issue that effects proton accelerators. It is a phenomena caused by electrons interacting with the surface of the walls of the accelerator resulting in the production of more electrons. It has already been seen that Laser Ablation Surface Engineering (LASE) of surfaces can reduce the Secondary Electron Yield (SEY) of Copper to below unity. In this work we will report on the surface analysis for a variety of LASE surfaces with different laser parameters (wavelength, scan speed, pitch, repetition rate, power, and pulse length).

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