

Ceramic Beam Tube Coating Investigation for LBNF Kickers

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The addition of the Long Baseline Neutrino Facility (LBNF) to Fermilab requires the installation of six extraction kickers into the current Main Injector beamline. These kickers will have beam tubes made of high purity alumina ceramic due to their necessary very low magnetic properties. This benefit is offset by undesirable electrical and secondary electron yield (SEY) properties. Ceramic beam tube coatings were investigated to improve electrical properties and reduce SEY while maintaining a low outgassing rate compatible with ultra-high vacuum systems.

Summary

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