

Abstract Submitted
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Design of a Fabry-Perot Open Resonator at Radio Frequencies for an MgB₂ Testing Platform¹ LAUREN PEREZ, Florida International University — A proposal was written to begin R&D on the use of MgB₂, a high-T_c superconducting material that can be deposited onto metallic surfaces, for radio frequency (RF) cavities. Materials Science Divisions at Argonne have been studying deposition techniques, including atomic layer deposition (ALD) to coat MgB₂ on sample 2” coupons. A Fabry-Perot open resonator is suggested as a cavity to test the quality of the coupons, while simulation software, Microwave Studios (MWS), is used to design and validate an open resonator model based on a previously reported cavity. The MWS simulation will be used to scale open resonator designs to different operating frequencies in the search for an optimal test structure. The results of the simulation varied with respect to the comparative article only slightly and most probably due to the differences in simulation software used and excitation source.

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