

# Novel Aluminum-based High-Q Cold RF Resonators for ADMX

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Improved aluminum refining techniques now provide high-quality, cost-effective high-purity aluminum samples. The high-purity aluminum will be better resonator material than copper because of its extremely low resistivity and high thermal conductivity at cryogenic temperature in strong magnetic fields. We will show material properties of high-purity aluminum and demonstrate possible improvement of the aluminum based ADMX resonator.

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**Session Classification:** Increasing Cavity Quality Factor