

Novel Microwave Cavities for Precision Measurement and Testing Fundamental Physics.

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At the University of Western Australia we have a long history of developing high-Q cavities and transducers at microwave frequencies for applications for precision measurement, frequency standards, quantum information applications and testing fundamental physics. The latter includes hidden sector photon and axion experiments. Types of resonators include high-Q dielectric whispering gallery resonators, TE and TM mode resonators, reentrant cavity resonators, including new multi-post cavities.

A broad overview of the cavity types and uses will be given, with particular focus on applications to axion and hidden photon sector experiments.

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