Abstracts

Tuning superconducting microwave filters by laser trimming

N.J. Parker, S.W. Goodyear, D.J.P. Ellis and R.G. Humphreys. "Tuning superconducting microwave filters by laser trimming." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1971-1974 vol.3.

At present, superconducting filters are usually tuned using screws, but there are many reasons to seek an alternative. Laser trimming is an attractive choice. A laser trimming system is described that can tune a high temperature superconductor microstrip filter while it is cooled and connected to a network analyser. Software has been written to control the system, fit measured data and modify a filter design to account for unintended couplings. The residual material left after trimming YBa/sub 2/Cu/sub 3/O/sub 7-/spl delta// has been shown to have negligible microwave loss. The system has been used to tune a simple three-resonator filter.

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