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Barium Hexaferrite Thick Films Made by Liquid Phase Epitaxy Reflow Method ALAAEDEEN ABUZIR, University of Idaho, YANKO KRANOV TEAM, T. PRAKASH TEAM, D. MCILROY TEAM, W. J. YEH TEAM — In this work, we report on the growing of $BaFe_{12}O_{19}$(or BaM) thick films on (0001) sapphire Al_2O_3 substrate. Our goal is to fabricate barium ferrite thick films which can be self-biased for circulator application. We have modified the liquid phase epitaxy (LPE) method by conducting the experiment in vacuum. A small chunk piece of the melt weighing about 0.035 g was placed on 1cm x 1cm Al_2O_3 substrate and remelted at 1200°C for one hour. The thickness of our thick films grown by this reflow method range from 300 to 550 μm. The coercivities of the thick films in the perpendicular direction were about 100Oe.

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