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**YIG ferrite thin-films epitaxially grown by reactive sputtering method**

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YIG (yttrium iron garnet) ferrite bulk material was useful for magnetic devices such as isolator, circulator, MSW filter, waveguide and etc. because it has low loss properties at high frequencies. In this study, 2.5 $\mu$ m thick amorphous Y-Fe-O thin-films were deposited on GGG (111) substrates using reactive RF magnetron sputtering method with  $Y_{2.84}Fe_{5.16}O_{12}$  ferrite sintered target. After that, the thin-films were post-annealed in air at a temperature higher than 650 degrees Celsius for 3 hours to be crystallized. In the XRD diagrams, diffraction peaks from only (444) or (888) plane were observed in the samples post-annealed at over 800 degrees Celsius. The half value width in the rocking curve for YIG ferrite (888) was only 0.19 degrees. These results proved that the films have been grown in hetero-epitaxial manner on GGG (111) substrate with high orientation. The YIG ferrite thin-films had saturation magnetization of 1.6 kG, relatively low coercivity of less than 3 Oe and small  $\Delta H$  of around 50 Oe. The YIG thin-films are promising to be used in ultra-thin isolators.