

Abstract Submitted  
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**Growth and physical properties of epitaxial GdN and SmN** BEN RUCK, BART LUDBROOK, JOE TRODAHL, ANDREW PRESTON, CLAIRE MEYER, Victoria University, Wellington, IAN FARRELL, STEVE DURBIN, ROGER REEVES, University of Canterbury, Christchurch, MATTHIAS KUBEL, Victoria University, Wellington, LAURENT RANNO, Institute Neel, Grenoble — The epitaxial growth and passivation of GdN and SmN by pulsed laser deposition on [100] YSZ substrates has been refined. We report on the growth kinetics, including the relaxation of the films, and the incorporation of oxygen at the substrate-film interface. Magnetic susceptibility measurements confirm a  $T_c$  of 70K and small coercive field for GdN. Resistivity measurements show an anomalous peak at  $T_c$ , while magnetic transport measurements indicate the films are electron doped to degeneracy, and show a strong anomalous Hall contribution below  $T_c$ .

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