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Temperature Dependence in the Magnetic Properties of FeRh/Ni Bilayers JOSHUA LAUZIER, LOGAN SUTTON, JOSE DE LA VENTA, Colorado State Univ — The temperature dependence of the coercivity and magnetization of FeRh/Ni bilayers was studied. FeRh exhibits a Magnetostructural Phase Transition at critical temperature $T_C \sim 370$ K, from a low temperature antiferromagnetic (AFM) to a high temperature ferromagnetic (FM) state. The magnetic transition of FeRh influences the coercivity and magnetization of the Ni films. In addition, the growth conditions allow tuning of the magnetic properties of the bilayer below T_C . When Ni films are grown on top of FM FeRh, the two layers are exchange coupled at temperatures below T_C . On the other hand, when the Ni films are deposited on AFM FeRh, the two layers act like two independent ferromagnetic layers without coupling below T_C . These results indicate that properties of FeRh/Ni bilayers are strongly affected by the growth conditions and that it is possible to control their magnetic properties by tuning the growth conditions.

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