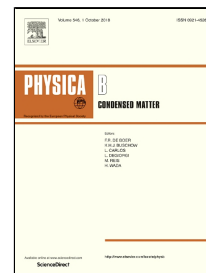


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Oscillatory magnetic behavior in an ion-irradiated Si/Ni/Si sandwich system

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Abstract

We have investigated the evolution of magnetic behavior with ion fluence in ion irradiation of a Si/Ni/Si sandwich system. An oscillatory behavior of the saturation magnetic moment and the coercive field has been observed with increasing ion fluence. As reported earlier, with increasing ion fluence, this system also shows an oscillatory amorphization and recrystallization of the Si substrate on which the Ni layer was grown. Ion beam induced Ni redistribution, associated with the oscillatory behavior of amorphization and recrystallization of Si, appears to be responsible for the oscillatory magnetic behavior in the sandwich structure.

Keywords: Thin film, Ion irradiation, Magnetism

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