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**Modulating magnetic properties of the one dimensional (1-D) Fe/Pt /Fe multilayered Nanowires: A first principles study** PUSPAMITRA PANIGRAHI, RANJIT PATI, Department of Physics, Michigan Technological University — Using first-principles density functional theory within the Local Spin Density Approximation (LSDA), we have predicted the stability, electronic and magnetic properties of 1-D ferromagnetic Fe/Pt/Fe multilayered nanowires. The thicknesses of the magnetic and non-magnetic spacer layers are systematically varied to study the evolution of magnetic properties with the spacer size. The stability of the nanowire is found to increase with the increase of the thickness of the Pt spacer. Furthermore, by increasing the thickness of the Pt layer in the nanowire, we found that the average magnetic moment per Fe atom in the ferromagnetic configuration can be enhanced significantly.

Ranjit Pati  
Department of Physics, Michigan Tech

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