V_nBz_{n+1}. In these V_nBz_{n+1} system, V ions are arranged in ferromagnetic state. Meaningfully, our results reveal an interesting nonmonotonous magnetic behavior caused by finite-size effect, and the energy cost for reversing the magnetic moment of the edge V oscillates with n. $V(Bz)_\infty$ is a proper material for spin-polarized transport and has high stability in the presence of electronic and magnetic field.

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