

Designing Bifunctional Molecular Devices with Metalloporphyrin Dimer

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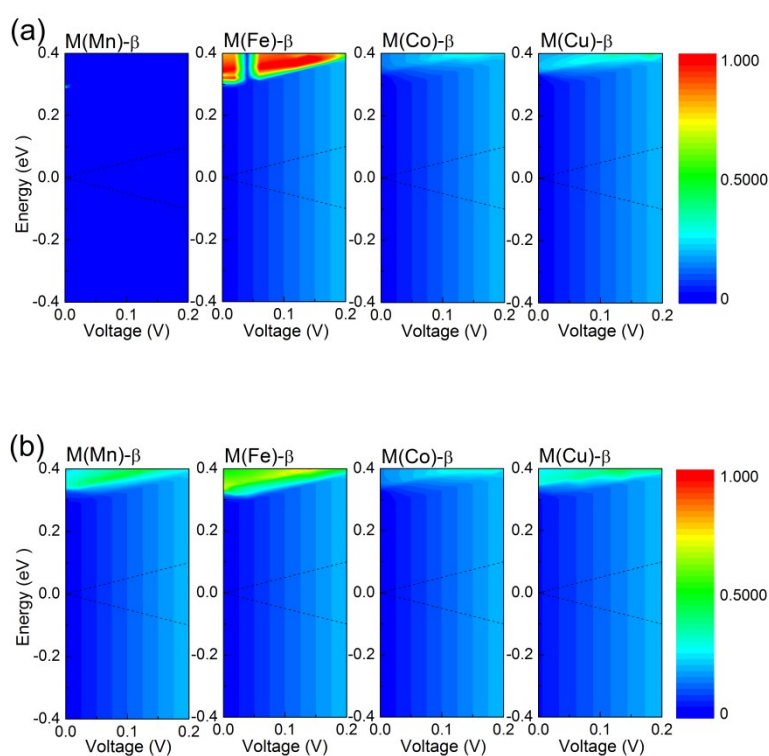


Fig. S1. Spin-resolved contour maps of β spin transmission spectra for M(Mn), M(Fe), M(Co), and M(Cu) in the bias range from 0 to 0.2V, respectively. The black dash lines designate the region of the bias window. The Fermi level is set at zero in the energy scale.

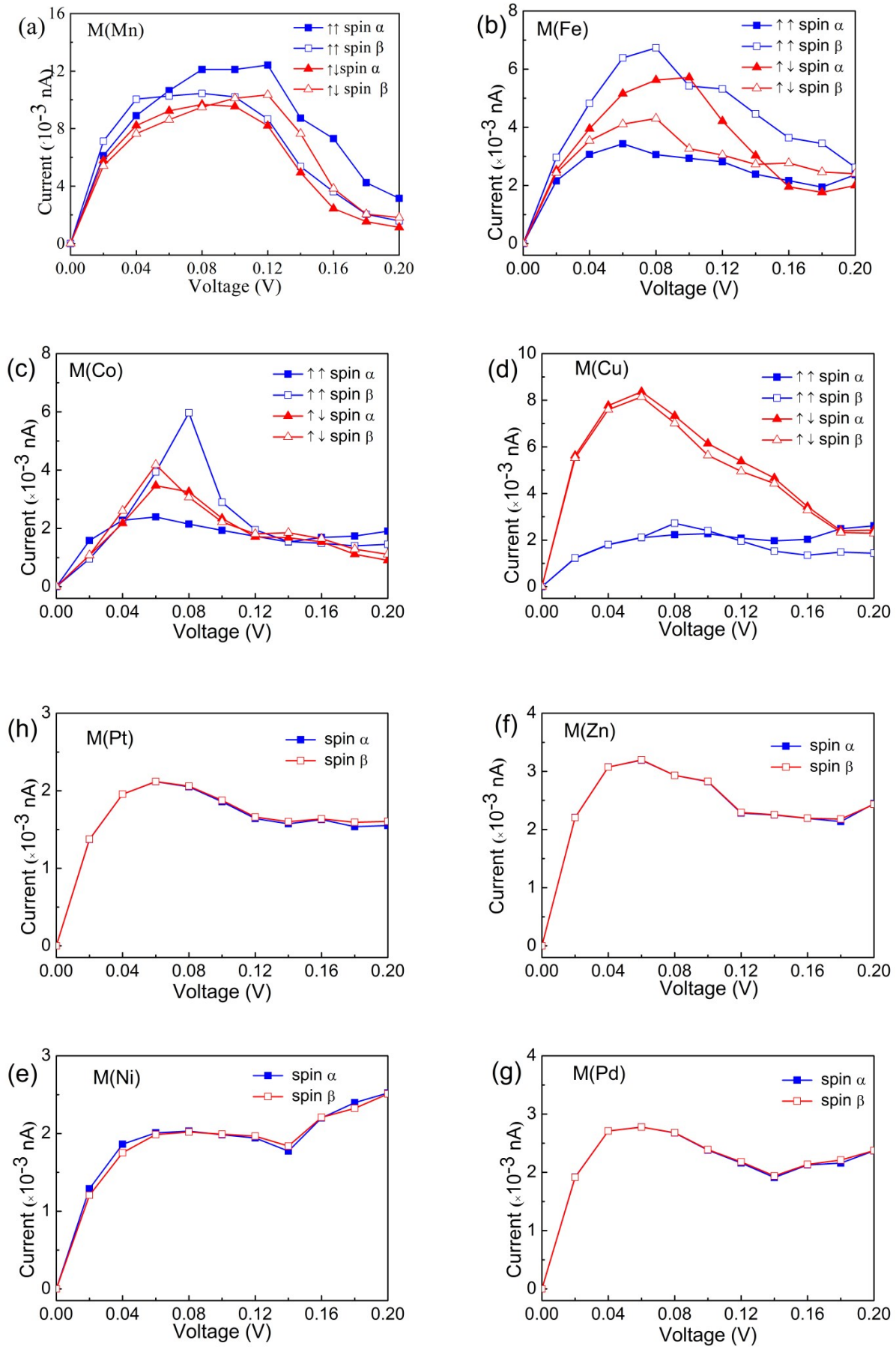


Fig. S2. (a)-(h) The IV curves of M(Mn), M(Fe), M(Co), M(Cu), M(Ni), M(Zn), M(Pd), and M(Pt) in AFM.

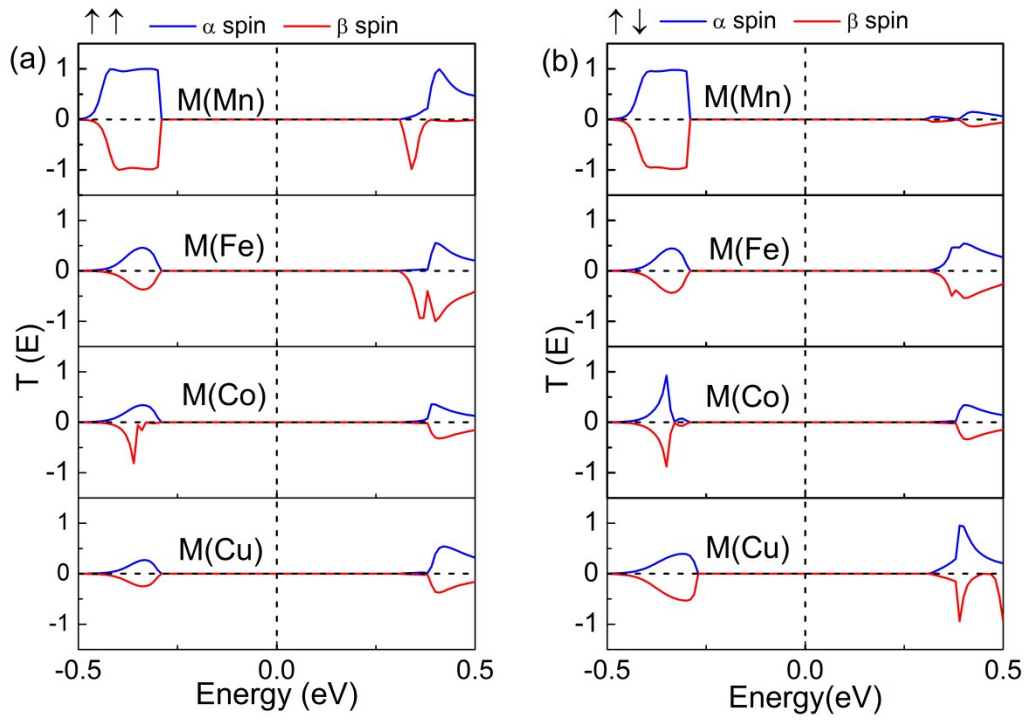


Fig. S3. The transmission spectra of M(Mn), M(Fe), M(Co) and M(Cu) in the AFM at zero bias.

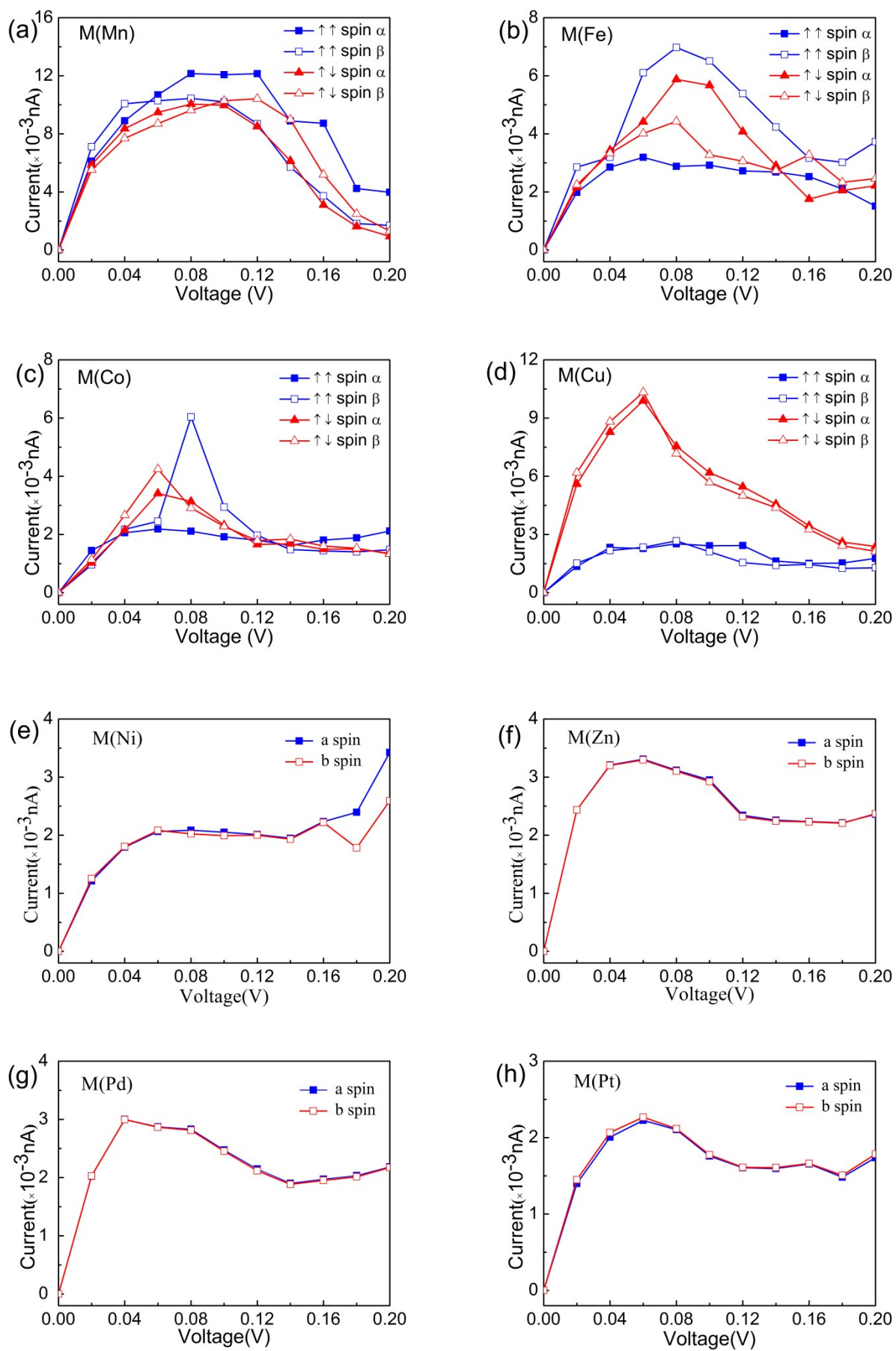


Fig. S4. (a)-(h) The IV curves of M(Mn), M(Fe), M(Co), M(Cu), M(Ni), M(Zn), M(Pd), and M(Pt) in AP.

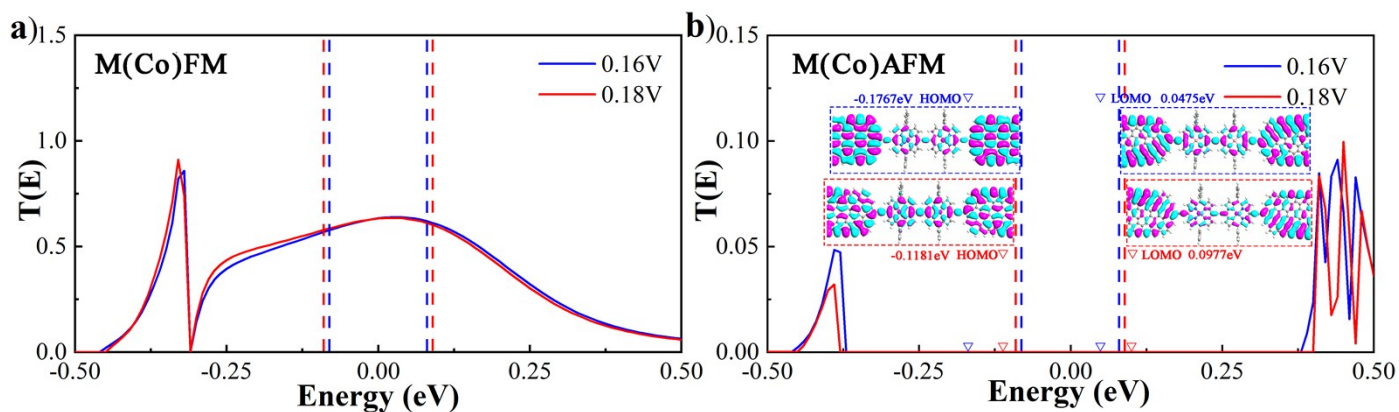


Fig.S5 The transmission spectra of M(Co) at 0.16 and 0.18V bias under $\uparrow\downarrow$ magnetic configurations, (a) in the FM ground state and (b) in the AFM ground state. The insets show the MPSHs of HOMO and LUMO of each bias voltage.

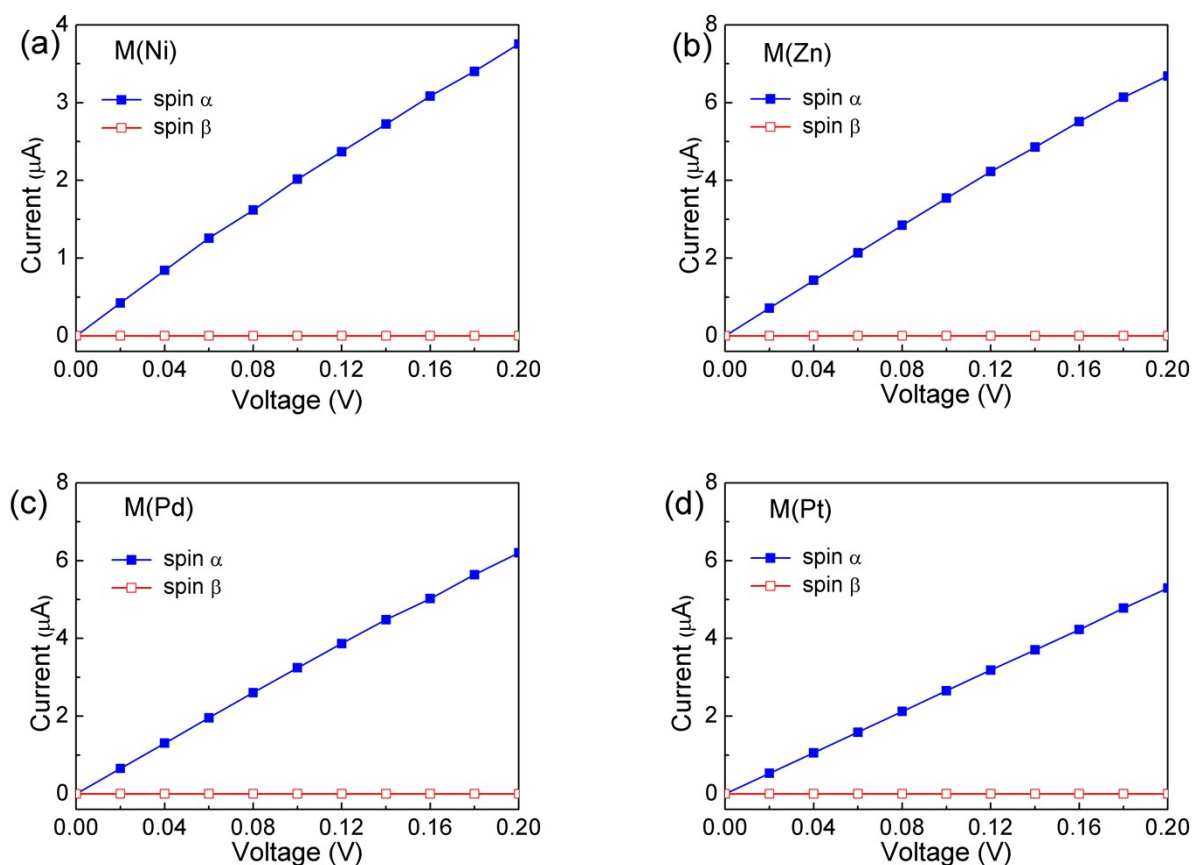


Fig. S6. (a)-(d) The IV curves of M(Ni), M(Zn), M(Pd) and M(Pt) in FM.

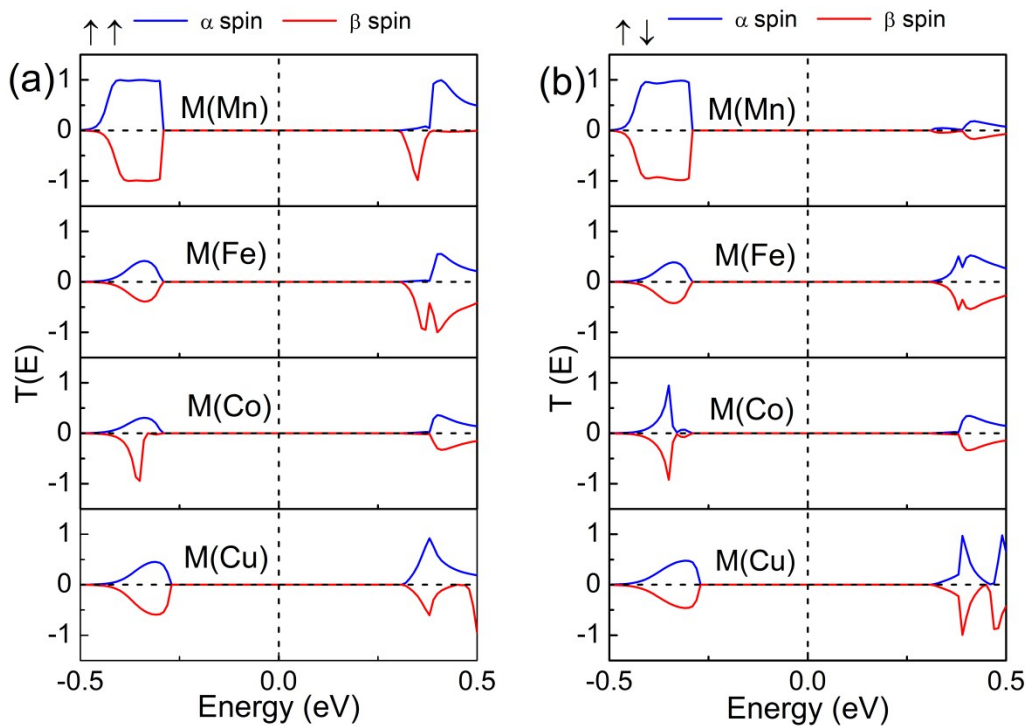


Fig. S7. The transmission spectra of M(Mn), M(Fe), M(Co) and M(Cu) in the AP at zero bias.

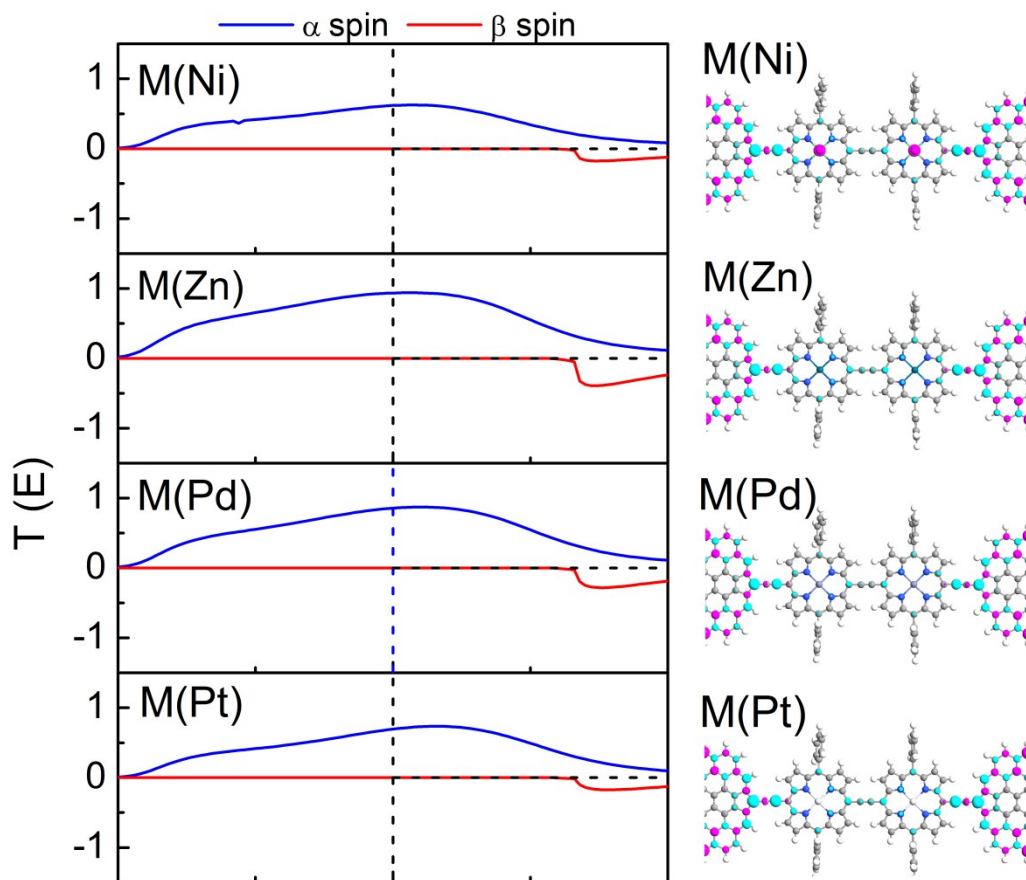


Fig. S8. The transmission spectra and spin electron densities of M(Ni), M(Zn), M(Pd), and M(Pt) in FM.

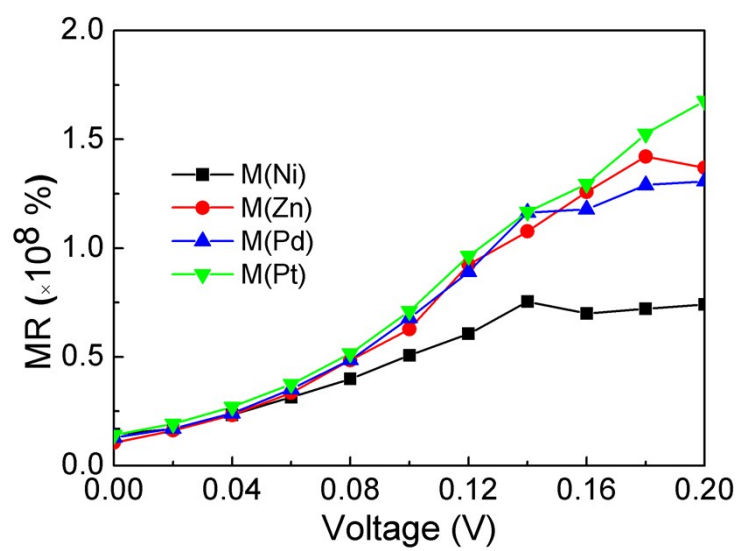


Fig. S9. The magnetoresistance of M(Ni), M(Zn), M(Pd), and M(Pt).