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Interfacial ferromagnetism in a Co/CdTe ferromagnet/semiconductor quantum well hybrid structure

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The magnetization properties of a ferromagnet-semiconductor Co/CdMgTe/CdTe quantum well hybrid structure are investigated by several techniques. Exploiting the proximity effect between acceptor bound holes and magnetic ions we detect the magnetization curves by measuring the circular polarization of photoluminescence in an out-of-plane magnetic field. We show that magnetization originates from interfacial ferromagnet on Co-CdMgTe surface and the proximity effect is caused by magnetization of interfacial Co-CdMgTe ferromagnetic layer whose magnetic properties are very different from Co.

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