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Metal-organic coordination networks on top of the topological insulator surface MIKHAIL OTROKOV, Donostia International Physics Center (DIPC), 20018 San Sebastian, Spain; Tomsk State University, 634050 Tomsk, Russia, EVGUENI CHULKOV, ANDRES ARNAU, Donostia International Physics Center (DIPC), 20018 San Sebastian, Spain — To realize the ferromagnetic ordering in the system of adatoms at the topological insulator surface one has to organize their ordered arrays [1] and prevent them from the diffusion [2] (intercalation [3]) inside the bulk (van der Waals gaps) of topological substrate. In principle, this could be achieved by growing the metal-organic coordination network on top of the topological insulator surface. Using ab initio density functional theory calculations, we demonstrate that a network formed by TCNE-like strong acceptor molecules and Co atoms, acting as magnetic centers, shows ferromagnetic coupling between Co centers when deposited on top of the topological insulator. We discuss the issue of the magnetic anisotropy and its influence on the surface electronic spectrum of such a system. [1] L. Chotorlishvili, A. Ernst, V.K. Dugaev, et al., Phys. Rev. B 89, 075103 (2014) [2] T. Schlenk, M. Bianchi, M. Koleini, et al., Phys. Rev. Lett. 110, 126804 (2013). [3] M.M. Otrokov, S.D. Borisovaa, V. Chis, et al., JETP Lett. 96, 714 (2013).

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