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Spintronics in hybrid organic/inorganic heterojunctions[1] SHAYAN HEMMATIYAN, Institut fuer Physik, Johannes Gutenberg Universitaet Mainz, D-55099-Dept of Physics, Texas A&M University, College Station, Texas 77843-4242, USA, ERIK MCNELLIS, JAIRO SINOVA, Institut fuer Physik, Johannes Gutenberg Universitaet Mainz, D-55099 Mainz, Germany — In this work, we present the results of extensive analytical and numerical calculations to investigate spin and charge transport inside organic semiconductors and also at the interface with ferromagnetic metals. Based upon these calculations, we will describe the underlying spin relaxation mechanisms with reference to the spin dependent characteristic parameters e.g. spin relaxation time and spin diffusion length of the organic semiconductors in connection with the ferromagnetic electrodes.

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