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**Tuning magnetic properties of metallic nanostructures on semi-insulating substrates** OLEG BROVKO, VALERI STEPANYUK, Max Planck Institute of Microstructure Physics, Halle, Germany — In the past two decades, the properties of metallic nanostructures on metallic surfaces have been studied in minute detail and possibilities to tune them have been explored both experimentally and theoretically. [1] Recently the focus has been shifting towards insulating or semi-insulating substrates, [2] the reason being that while on metallic surfaces the magnetism of nanostructures is determined by the coupling of the localized magnetic moment of the ad-structure to a bath of itinerant electrons of the substrate, on insulating substrates the spin is largely isolated and often exhibits emergent quantum properties, fascinating from both fundamental and application points of view. Semi-insulating substrates open an additional possibility of adjusting the coupling of the ad-structure spin to the substrate. In the present contribution we show the possibility to tune magnetic properties of metal nanostructures and their interaction among each other on such semi-insulating substrates as thin decoupling CuN, h-BN and MgO layers. As a means of tuning we focus on adsorption site tailoring and exposure to external electric field. [1] O. Brovko et al., JPCM 26, 093001 (2014). [2] S. Loth et al., Science 335, 196 (2012), T. Schuh et al., Nano Lett. 12, 4805 (2012)

Oleg Brovko  
Max Planck Institute of Microstructure Physics, Halle, Germany

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