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**Szkoła IN** : □ **Monday 23th of November 2015, g. 15:15-17:00, room 1.40, Pasteura 5, Faculty of Physics University of Warsaw**

Spin-based electronics is one of the emerging branches in today's nanotechnology and the most active area within nanomagnetism. So far spintronics has been based on conventional materials like inorganic metals and semiconductors. A current trend in this area is that of incorporating molecules in the game. The resulting emergent field - namely molecular spintronics - is propelled by the possibility of preparing a second generation of spintronic devices based on molecular materials (organic spintronics), and by the possibility to manipulate the molecular spin individually (single-molecule nanospintronics). In this talk these two trends will be illustrated with several examples taken from my own research: i) the use of single-molecule nanomagnets as spin qubits [1]; ii) The electrical addressing of the spin in molecular nanoobjects [2]; iii) The use of single-molecule magnets based on rare-earths as components of new spin valves [3]; iv) the fabrication of spin-OLEDs (i.e., multifunctional molecular devices in which the light emission can be tuned through a magnetic field).

[1] J. M. Clemente-Juan, E. Coronado, A. Gaita-Ariño, Chem. Soc. Rev. 41, 7464 (2012).

[2] Dugay, J. et al. Adv. Mater. 27, 1288 (2015).

[3] Bedoya-Pinto, A. et al. Adv. Elec. Mater. 1, 1500065 (2015).

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