

**Aquitaine –Karnataka collaboration
Scientific Project for Pre-PhD student exchange**

Scientific Proposal

Project Title	Preparation and characterization of single-chain magnets.	
Scientific domain	Molecular Magnetism	
Summary (ca. 10 lines)	This project will be dedicated to the design of advanced molecule-based materials for future recording media. It consists in the synthesis and characterizations of a new class of magnetic materials made of one-dimensional assemblies of single-molecules magnets (SMM) (or more generally magnetic complexes) and magnetic or photomagnetic building blocks. We will take advantage of the versatility of the coordination chemistry to associate these functional precursors, with the intention of making molecule-based magnets, single-chain magnets (SCMs) and photoswitchable magnets that could be a step towards future applications [1,2].	
Student profile wished	The project is adapted to all the students who have followed a Master degree in Chemistry.	
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Timing & duration for project (give approximate ranges)	3 to 9 month	
Representative References	[1] R. Clérac, H. Miyasaka, M. Yamashita, C. Coulon, <i>J. Am. Chem. Soc.</i> , (2002), 124 , 43, 12837 ; M. Ferbinteanu, H. Miyasaka, W. Wernsdorfer, K. Nakata, K. Sugiura, M. Yamashita, C. Coulon, R. Clérac, <i>J. Am. Chem. Soc.</i> (2005), 127 , 3090 ; H. Miyasaka, T. Madanbashi, K. Sugimoto, Y. Nakazawa, W. Wernsdorfer, K.-i. Sugiura, M. Yamashita, C. Coulon, R. Clérac, <i>Chem. Eur. J.</i> , (2006), 12 , 7028 ; L. Lecren, W. Wernsdorfer, Y.-G. Li, A. Vindigni, H. Miyasaka, R. Clérac, <i>J. Am. Chem. Soc.</i> (2007), 129 , 5045 ; T. D. Harris, M. V. Bennett, R. Clérac, J. R. Long, <i>J. Am. Chem. Soc.</i> (2010), 132 , 3980 ; H. Miyasaka, T. Madanbashi, A. Saitoh, N. Motokawa, R. Ishikawa, M. Yamashita, S. Bahr, W. Wernsdorfer, R. Clérac, <i>Chem. Eur. J.</i> , (2012), 18 , 3942. [2] R. Ababei, C. Pichon, O. Roubeau, Y.-G. Li, N. Bréfuel, L. Buisson, P. Guionneau, C. Mathonière, R. Clérac, <i>J. Am. Chem. Soc.</i> (2013), 135 , 14840	

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