

# Molecular recognition: an approach in Supramolecular Chemistry

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The design, synthesis, and characterization of supramolecular ensembles via the self-assembly of small chemical components has been an area of intense research over the past two decades in order to obtain advanced materials or systems.[1] Many efforts have been done with metal containing species due to the resulting wide range of particular properties, geometries and ways of interaction with guest molecules given by the presence of a particular metal. In fact, although the fundamental concepts of self-assembly are well understood, the design of ligand shapes that will direct the formation of predetermined architectures and/or interact with specific motifs (molecular recognition process) remains a challenging aspect of this chemistry.

In our research group we are focused on metal-sal(oph)en complexes and alkynyl-gold(I) structures.[2] Both types of derivatives are well-known for the numerous applications in chemistry in very different fields, which could be tuned by modifications on the chemical structure (*e.g.* nature of the metallic centre employed (in the case of sal(oph)en), chromophore, spectroscopic properties...).[3] The interaction with small analytes, such as anions, and their particular role in the molecular recognition of biological relevant species have been explored recently by us and presented in this talk.

[1] Neil J. Young and Benjamin P. Hay, *Chem. Commun.*, 2013, 49, 1354.

[2] (a) F. Sabaté, I. Giannicchi, L. Acón, A. Dalla Cort, L. Rodríguez, *Inorg. Chim. Acta* 2015, 434, 1; (b) I. Giannicchi, R. Brissos, D. Ramos, J. de Lapuente, J.C. Lima, A. Dalla Cort, L. Rodríguez, *Inorg. Chem.* 2013, 52, 9245; (c) R. Brissos, D. Ramos, J.C. Lima, F. Yafteh Mihan, M. Borràs, J. de Lapuente, A. Dalla Cort, L. Rodríguez, *NewJ.Chem.*, 2013, 37, 1046; (d) M. Cano, L. Rodríguez, J.C. Lima, F. Pina, A. Dalla Cort, C. Pasquini, L. Schiaffino, *Inorg. Chem.* 2009, 48, 6229; (e) V. Andermark, K. Göke, M. Kokoschka, M.A. Abu el Maaty, C. Tung Lum, T Zou, R. Sun, E. Aguiló, L. Oehninger, L. Rodríguez, H. Bunjes, S. Wölfl, C.-M. Che, I. Ott, *J. Inorg. Biochem.* DOI: 10.1016/j.jinorgbio.2015.12.020; (f) J. Arcau, V. Andermark, E. Aguiló, A. Gandioso, A. Moro, M. Cetina, J.C. Lima, K. Rissanen, I. Ott, L. Rodríguez, *Dalton Trans.*, 2014, 43, 4426; (g) L. Rodríguez, J.C. Lima, M. Ferrer, O. Rossell, M. Engeser, *Inorg. Chim. Acta* 2012, 381, 195.

[3] (a) A. Dalla Cort, P. De Bernadin, G. Forte and F. Yafteh Mihan, *Chem. Soc. Rev.* 2010, **39**, 3863; (b) J.C. Lima, L. Rodríguez, *Chem. Soc. Rev.*, 2011, **40**, 5442