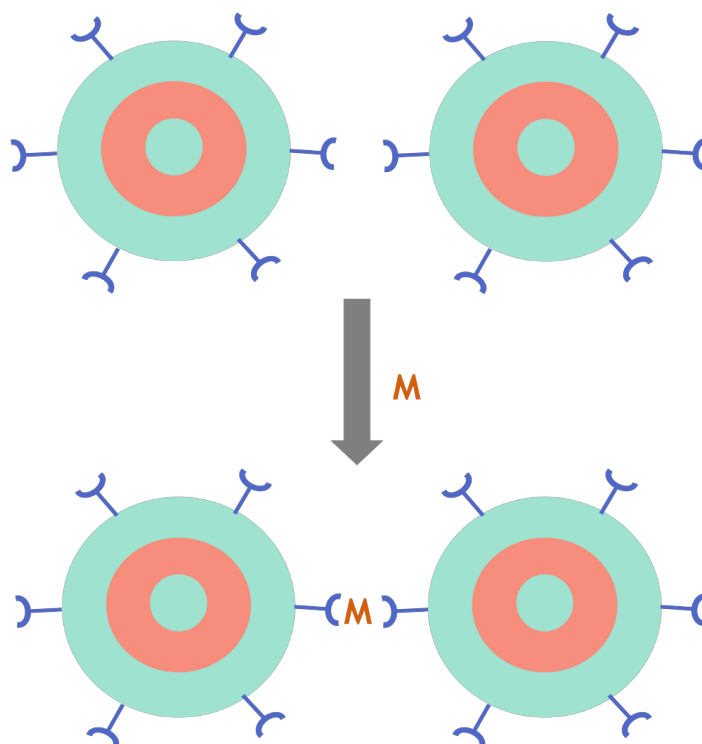


**Molecular factories based on  $\{M(2,2':6',2''\text{-terpyridine})_2\}^{2+}$ -zipped co-block polymer vesicles**

A. Wiesler<sup>1</sup>, C. G. Palivan<sup>2</sup>, A. I. Dinu<sup>2</sup>, E. C. Constable<sup>1\*</sup>, C. E. Housecroft<sup>1\*</sup>

<sup>1</sup>Department of Chemistry, University of Basel, Spitalstrasse 51, 4056 Basel, Switzerland, <sup>2</sup>Department of Chemistry, University of Basel, Klingelbergstrasse 80, 4056 Basel, Switzerland

We show how the chelating power of bis(2,2':6',2''-terpyridine)metal(II) complexes can be applied to 'zip' together co-block polymer vesicles to give pre-organized assemblies.<sup>1</sup> Different approaches have been used to functionalize polymer vesicles which condense with appropriately functionalized 2,2':6',2''-terpyridine (tpy) domains; sequential reaction with metal ions e.g.  $\text{Fe}^{2+}$  leads to an organized assembly. All reactions are carried out under ambient conditions and in aqueous media. The principle of the procedure is shown in the scheme below:



**Figure 1:** Strategy for assembly of arrays of coupled polymer vesicles.

The characteristic MLCT absorption associated with the  $\{\text{Fe}(\text{tpy})_2\}^{2+}$  chromophore is a powerful probe with which to assess the degree of vesicle aggregation. This along with AFM and TEM studies will be discussed.

The ordered structure of the polymer vesicle assembly provides a platform for an array of artificial compartments for a molecular factory. Surface modification is particularly attractive.<sup>2</sup> Future directions of the work will be discussed, e.g. encapsulation of components of the 'factory' within hollow vesicles and communication between the compartments.

[1] Constable, E.C.; Meier, W.; Nardin, C.; Mundwiler, S. *Chem. Commun.* **1999**, 1483 – 1484

[2] Langowska, K.; Kowal, J.; Palivan, C.G.; Meier, W. *J. Mater. Chem. B* **2014**, 2, 4684.