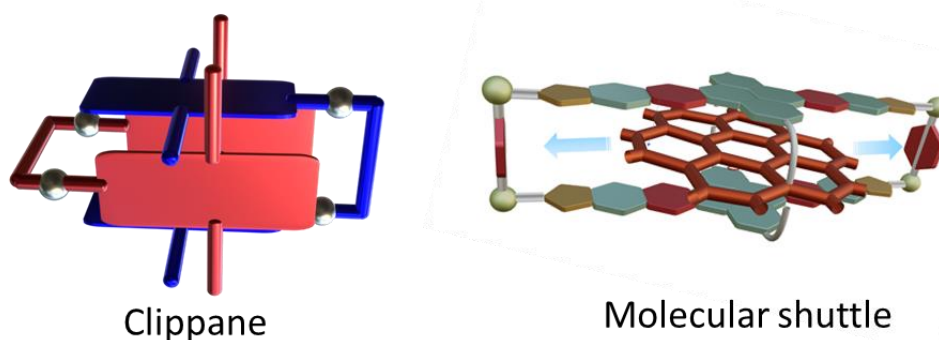


# N-Heterocyclic carbenes as toolkits for the preparation of supramolecular assemblies and switchable catalysts

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During the last six years we devoted our research toward broadening the applications of planar extended  $\pi$ -conjugated NHC ligands for the preparation of organometallic-based supramolecular structures,<sup>[1]</sup> including their use as hosts for some selected organic and inorganic guests, such as polycyclic aromatic hydrocarbons (PAHs), fullerenes and square planar metal complexes. We also described a series of di-gold(I)-based metallotweezers,<sup>[2]</sup> and even a new mechanically interlocked molecule (MIM) that we named *clippane*.<sup>[3]</sup> In a more recent contribution, we described a new molecular shuttle based on a nanosized 'slit-like' metallobox.<sup>[4]</sup>

In addition to this, we recently focused our attention on the design of supramolecular- and redox-switchable catalysts based on the use of metal complexes bearing NHC ligands functionalized with a naphthalene-di-imide core.<sup>[5]</sup> We will show how these redox/supramolecular switchable catalysts can be used for unveiling key information about the mechanism of certain catalytic reactions.



**Figure 1.** A *Clippane* and a *Molecular Shuttle*

## References

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