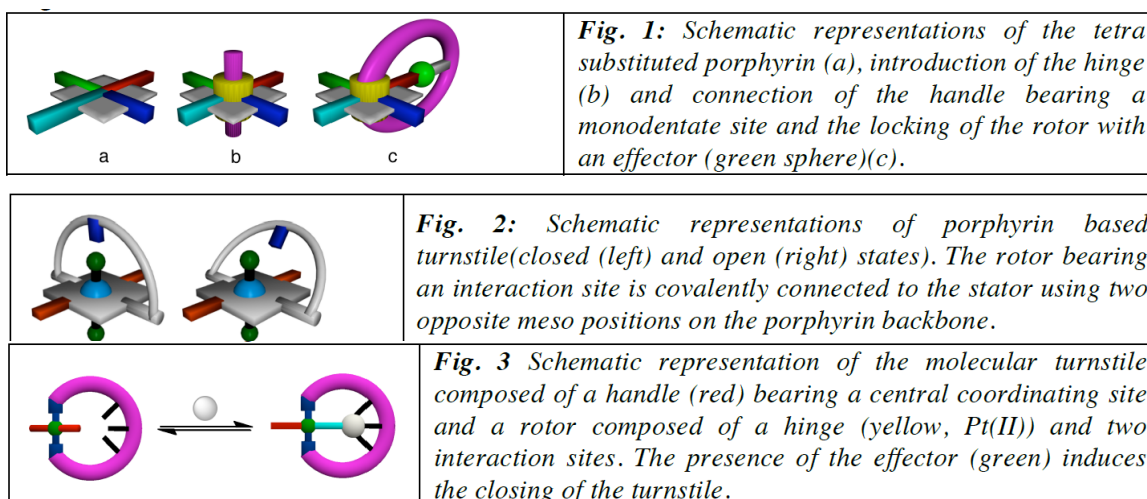


# MOLECULAR TURNSTILES

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Molecular translational or rotational motors are architecture for which movements between a fixed and a mobile portion may be induced by external stimuli.<sup>1</sup> As a first step towards molecular motors, a series of molecular turnstiles have been designed and synthesized. The first category is based on Sn(IV)porphyrins as stators bearing at the meso positions interactions sites and equipped with different handles as rotors. The connection between stators and rotors is achieved through Sn-O (Fig. 1).<sup>2-7</sup> The second design principle is based on the covalent attachment of the rotor to the stator using two opposite *meso* positions on the porphyrin backbone (strapped porphyrins) (Fig. 2).<sup>8,9</sup> Finally, the tired approach is based on organometallic Pt complexes as rotors and coordinating handles as stators (Fig. 3).<sup>10-14</sup> The design, synthesis and structural characterizations, both in solution by multidimensional <sup>1</sup>H-NMR techniques and in the solid state by X-ray diffraction on single crystals, of a series of molecular gates and turnstiles will be presented and discussed.



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