

Chemistry and creativity: From photochemistry to molecular machines

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Light-induced processes are at the basis of fundamental natural phenomena as well as of a variety of applications. Since the functions that can arise from the interaction between light and matter depend on the degree of complexity and organization of the receiving ‘matter’, the research on these processes has progressively moved from molecular to supramolecular (multicomponent) systems, thereby originating the field of supramolecular photochemistry. In this context, several research groups have prepared and investigated multicomponent chemical systems capable of performing specific light-induced functions, such as elaboration of information in the form of input/output signals and relative mechanical motions of the molecular components. Systems of this type can be viewed as simple examples of molecular devices and machines. These studies are of interest not only for increasing the basic understanding of photoinduced processes but also for the growth of nanoscience and the development of nanotechnology.

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