

Organic/inorganic heterocyclic hybrids as universal templates and building blocks

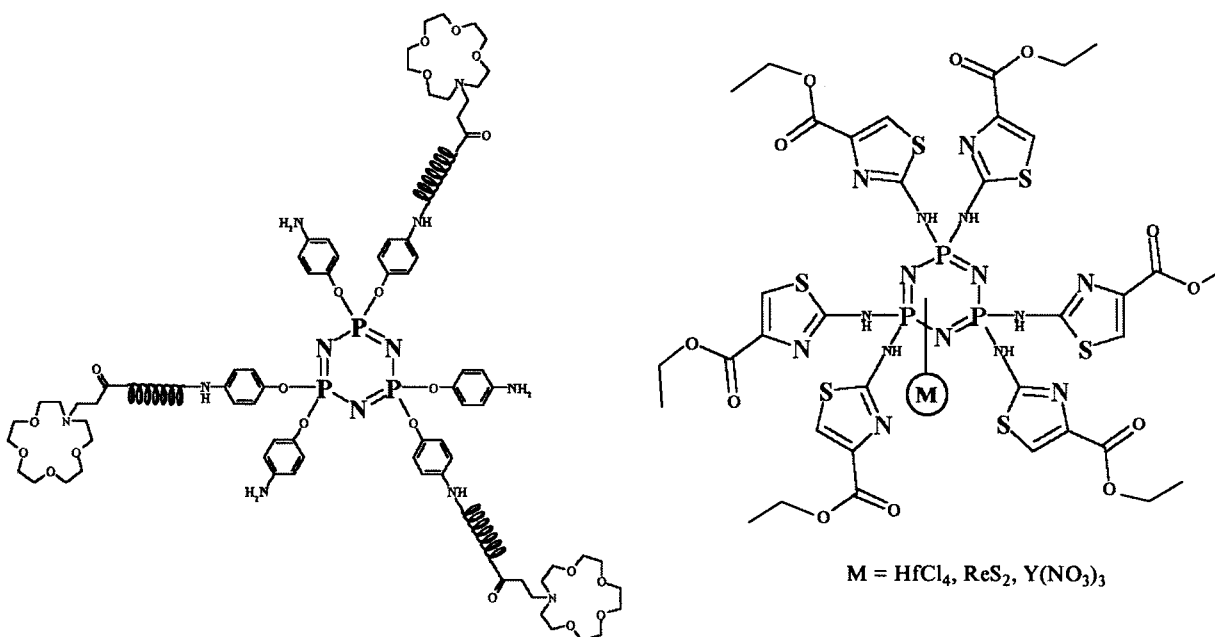
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Hexachloro- and functional hexakis-substituted cyclotriphosphazenes are used as templates for binding with organic heterocyclic chromophores directly or via polyaminoacid's spacers. Fully and unfully substitutions (hexa- or less) of functional groups permit manipulate with different fragments introductions. Star-shape structures such as the cyclophosphazene cores with α -helical polyaminoacids were connected with azocrown-ethers and pyrene-1-butyric acid derivatives. Metalloions Sorption for crown-ether and for cyclophosphazene is different that can be useful for analytical application. Introduction of pyrene-luminescent markers is possible from one to six molecules, data of luminescence dynamics are discussed in terms of single molecule detection.

Organic heterocycles - 5-methoxytryptamine and bifunctional thiazole - react with hexachlorocyclotriphosphazene by non-geminal mechanism result to aminocyclophosphazenes with various substitution degree n, excepting n=5. Hexatryptamine derivatives form complexes with metallocompounds CuCl_2 and CoCl_2 . Crystalline structures and molecular architectures were considered by SWAX method. Complexation of hexakisthiazole/cyclophosphazene with rare-earth metallocompounds (La, Y, Re-salts) is discussed as well.



Obtaining organic/inorganic heterocyclic hybrids possess multicentres for covalent and non-covalent bonding by different types: H-bonds, coordinated, ionic, because we propose to use them as convient building blocks for further synthesis.

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