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Minireview

Peptoid Macrocycles: Making the Rounds with Peptidomimetic Oligomers

K. Kirshenbaum et al.

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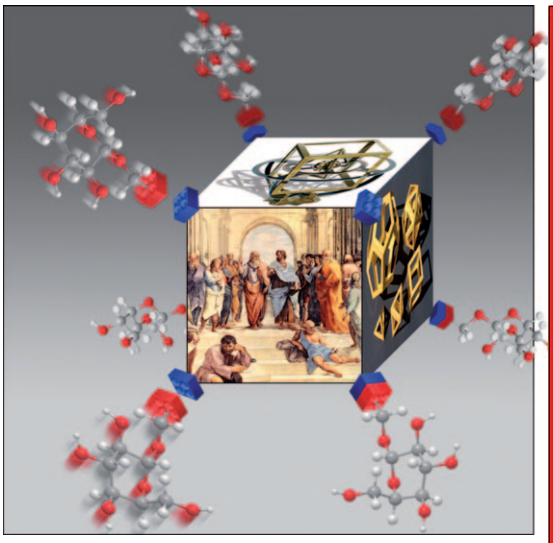
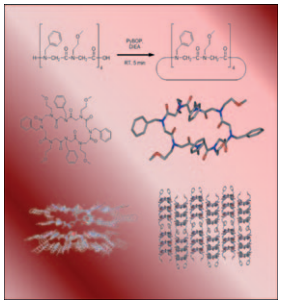
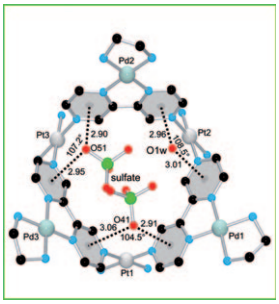
… with eightfold cubic symmetry, functionalized for click conjugation, has been developed for the rapid assembly of multivalent glycoclusters and is described by W.-D. Fessner et al. in their Communication on page 5544 ff. The pictures on the front, lateral, and top faces of the cube show the famous painting "The School of Athens" by Italian renaissance artist Raffaello Santi depicting Plato amidst other ancient Greek philosophers, the five regular convex polyhedra known as the "Platonic solids", and their use by 16th-century German astronomer Johannes Kepler to define a model of the solar system.

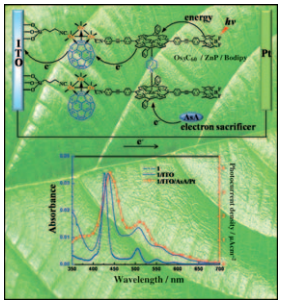




Peptoid Macrocycles
Peptoids constitute a highly versatile family of peptidomimetics with the capacity for presentation of a diverse range of chemical functionalities. Cyclic peptoids are an initial step towards developing long-range constraints to direct oligomer conformation and to ultimately control the overall topological characteristics. For more details see the Minireview by K. Kirshenbaum et al. on page 5528 ff.

Host–Guest Chemistry
In their Communication on page 5577 ff., P. J. Sanz Miguel, B. Lippert, and A. Galstyan describe a rare case of SO_4^{2-} trapping in a cationic host, which is not dominated by directed hydrogen bonds between the host and the sulfate. Rather it is the high positive charge of the metal-containing host and the possibility of SO_4^{2-} to retain at least one water molecule from its hydration shell that reduces the energy penalty of complete desolvation.





Triad Clusters
The SAM of a new artificial photosynthetic triad has been prepared (ITO = indium–tin oxide) and the photoelectrochemical properties have been investigated by using a standard three-electrode system in the presence of a sacrificial electron donor (ascorbic acid). In their Full Paper on page 5586 ff., J. T. Park, Y.-K. Han, T. Joo et al. describe this triad, which is a great example to solve the poor light-harvesting properties of porphyrin molecules in the blue-green (450–600 nm) solar spectrum regions and to mimic natural photosynthetic systems through sequential energy and electron transfer.