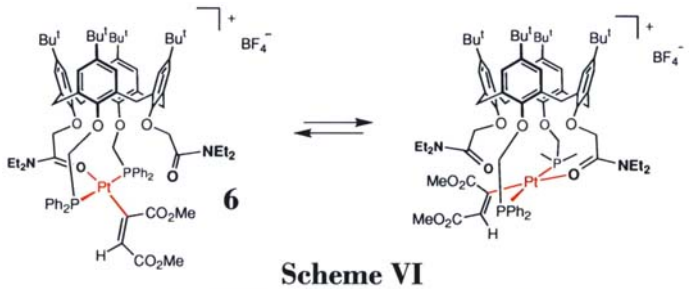

Scheme VI

The pendulum motion of a platinum plane

a metal centre with a free co-ordination site that remains entrapped inside a cavity and which flips from one amide to the other.

Future Opportunities

Potential applications of platino-calixarenes are in the field of homogeneous catalysis. The localisation of reactive organometallic fragments inside molecular pockets is primarily expected to favour shape selectivity and promote enantioselectivity, when the pocket is chiral.

A possible extension concerns the development of two-phase catalysts based on cavities substituted with water-solubilising groups located at their periphery. If the interior of the cavity is sufficiently lipophilic, highly efficient phase-transfer catalysis could be achieved. Clearly the dimension of the cavity must be adapted to the size of the substrate. This can be done if one considers that larger calixarenes are now readily accessible. The fact that calixarene matrices offer many opportunities for functionalisation – the aromatic *p*-carbon atoms of the phenol rings may also be functionalised – opens the way for further possible objectives, such as the preparation of immobilised systems suitable for solid state reactions or, provided that the systems contain additional electro- or photo-active functionalities, their use as specific sensors.

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Catalytic Reaction Guide

Johnson Matthey has recently updated and re-issued its popular "Catalytic Reaction Guide". In the form of a pocket-sized slide chart, catalyst recommendations, with typical operating conditions are given for 69 key chemical reactions of industrial significance. Over a quarter of the entries are homogeneously catalysed reactions, which acknowledges the increasing importance of this technology.

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