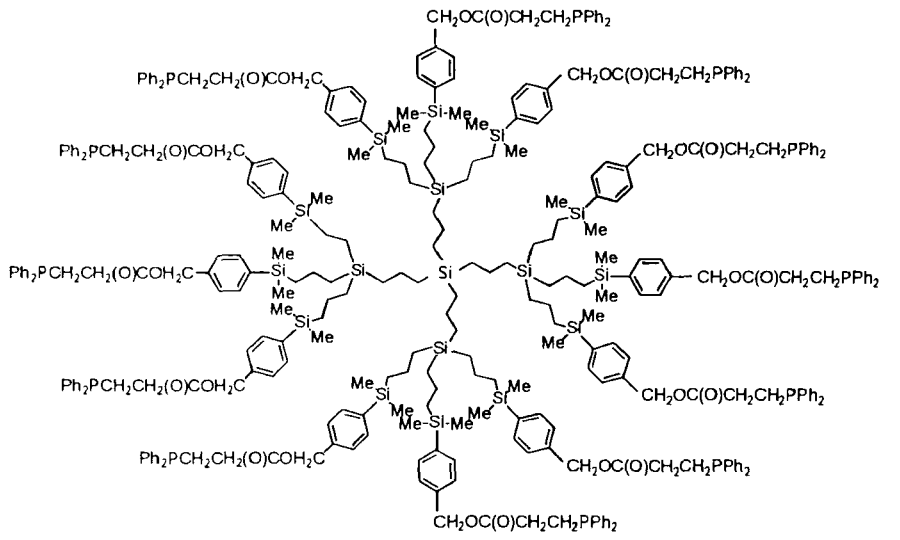

Fig. 1 A palladated derivative of a phosphine functionalised dendrimer. This has been successfully used as the catalyst in the codimerisation of styrene and ethylene

consequently their efficient recycling, remain to be investigated.

Another approach to catalyst recovery is to anchor the catalyst to a well defined macromolecular support, which will keep the catalyst on one side of the microporous membrane in a membrane reactor. If the large support is soluble and indeed well defined, then fast single site homogeneous catalysis can take place. Professor G. van Koten, Utrecht University, described this technique and noted that carbosilane dendrimers may be the ideal support for this. In his group nickel- and palladium-functionalised dendrimers have already been prepared. The palladated derivative of a phosphine functionalised dendrimer has been successfully used as the catalyst in the codimerisation of styrene and ethylene, see Figure 1. Catalyst retention in a membrane reactor is already rather good for relatively low molecular weight dendrimers but catalyst deactivation is still a problem. Investigations into the origin of this deactivation, whether membrane or dendrimer-related, are now being performed.

Other interesting contributions, not concerned with the platinum group metals, were presented at the Symposium, but are not reviewed here.

In conclusion, the quality of the work undertaken in the U.K. and in The Netherlands and described at the Symposium should ensure that these Symposia will play an increasing role in the exchange of ideas on catalysis.

The fourth Anglo-Dutch Symposium is expected to take place in The Netherlands in the autumn of 2000, probably at the University of Utrecht.

Sonochemical Platinum Reduction

Platinum nanoparticle, of interest because of their high catalytic activity, were prepared in an aqueous system using high density ultrasound (200 kHz and 6 W cm^{-2}). The nanoparticles were found by researchers from Osaka Prefecture University (Y. Mizukoshi, R. Oshima, Y. Maeda and Y. Nagata, *Langmuir*, 1999, **15**, (8), 2733–2737) to be smaller and more regular than those made radiochemically. Stable, homogeneously spherical, monodispersed Pt nanoparticles, of average diameter 2.6 nm, were formed at the rate of 26.7 μM min^{-1} in a Pt(II)-sodium dodecyl sulfate system. Three kinds of reducing species are proposed to be formed in the sonicated system, near and/or in the hot bubbles, and these then react with the $PtCl_4^{2-}$ complexes to form the platinum nanoparticles.