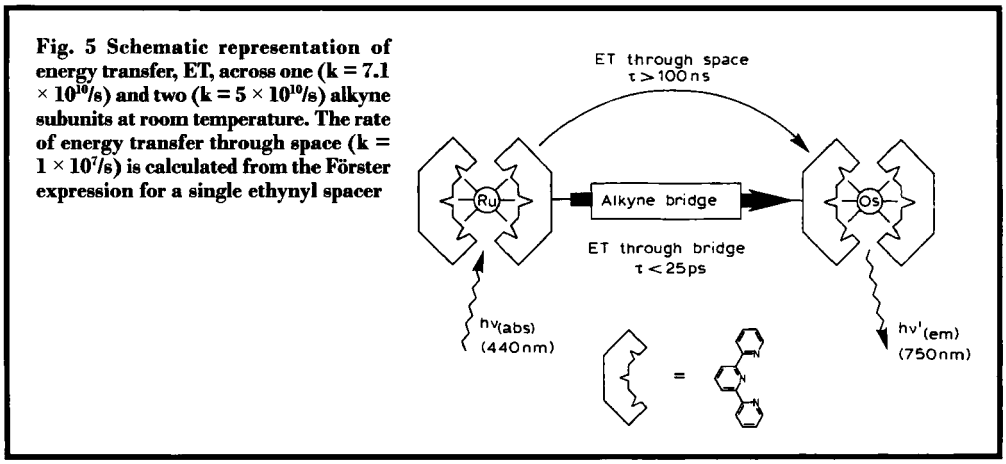

Fig. 5 Schematic representation of energy transfer, ET, across one ($k = 7.1 \times 10^{10}$/s) and two ($k = 5 \times 10^{10}$/s) alkyne subunits at room temperature. The rate of energy transfer through space ($k = 1 \times 10^{7}$/s) is calculated from the Förster expression for a single ethynyl spacer

(Figure 3). In this case, the energy levels of the various components are situated such that energy- and electron-transfer reactions are thermodynamically unfavourable. Instead, the triplet lifetimes of the terminal ruthenium(II) bis-terpyridyl complexes ($\tau \sim 175$ ns) are seen to be markedly enhanced relative to that of the mononuclear complexes ($\tau \sim 0.56$ ns) in deoxygenated acetonitrile solution. There is also a substantial lowering of the triplet energy and an increase in the luminescence yield upon incorporation of an ethynyl substituent into one of the co-ordinated terpyridyl ligands.

Such effects are entirely consistent with selective promotion of an electron from the ruthenium(II) centre to the ethynyl-substituted terpyridyl ligand within the metal-to-ligand charge-transfer triplet manifold. Conjugation between the ethynyl substituent and the terpyridyl ligand might enable this electron to reside in an extended π^*-orbital that encompasses both the ethynyl-substituted terpyridyl ligand co-ordinated to the ruthenium centre, and the bridging alkyne.

The concluding part of this paper is scheduled to appear in the April 1996 issue of this journal.

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Small-Particle Platinum Catalysts

The highly uniform mesoporous aluminosilicate (MCM-41) has excellent catalytic properties but has only recently been studied as a support material.

Now, however, researchers from Germany have synthesised platinum-containing MCM-41 catalysts via different techniques and tested their catalytic performance during the oxidation of carbon monoxide in air (*J. Chem. Soc., Chem. Commun.*, 1995, (22), 2283–2284).

Catalyst performance depended on the preparation method. The best performance was achieved over platinum-MCM-41 prepared by incipient wetness, giving platinum particles of size around 2 nm, and 50 per cent carbon monoxide conversion at temperatures as low as 360 K.