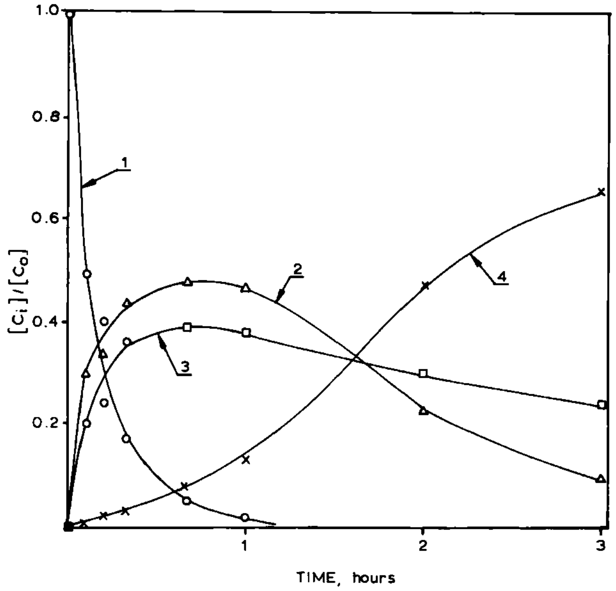
Fig. 4 Distribution of components during acrolein hydrogenation at a pressure of 3.4 MPa:
1 - acrolein
2 - propionic aldehyde
3 - allyl alcohol
4 - propyl alcohol
[C_i] - current concentration of the reaction products;
[C_0] is the initial concentration of acrolein



for the production of 3,4-dichloroaniline has shown that its service life after refining three or four times is over 10,000 hours and that only 5 to 7 g of iridium are needed to produce 1 tonne of final product; this ignores the refining process which recovers about 90 to 95 per cent of the iridium and returns it to the process.

Conclusions

Investigations on the behaviour of our iridium-based catalyst in some hydrogenation reactions have revealed that it possesses a number of features which make it superior to other platinum metals catalysts and testify to its unique hydrogenation characteristics. We believe that this may open up opportunities for the use of iridium in full-scale processes in the chemical industry.

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Ruthenium Sensitisers in Solar Cells

Highly efficient nanocrystalline photovoltaic devices, based on Ru and Os sensitisers have been reported previously (1). The most efficient and stable sensitisers known at present are carboxylated Ru(II) polypyridyl complexes.

Now, researchers from Switzerland (2) have developed a series of new Ru(II) complexes with 2,6-bis(1-methyl-benzimidazol-2-yl)pyridine (bmipy), and tested them by structural variations of NCS and 4,4′-dcbpy in prototype K[Ru(II)(bmipy)(4,4′-dcbpy)(NCS)] (4,4′-dcbpy = 2,2′-bipyrdine-4,4′-dicarboxylate), for their performance as charge transfer sensitisers for nanocrystalline TiO_2. A phosphonate group, substituted for carboxyl, was a useful alternative as an anchoring unit, as the Ru complex did not desorb on exposure to water.

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