



the *c* and *a* directions. This gives rise to a 2-D sheet structure in the *ac* plane, the sheets being separated in the *b* direction by the caesium ions and water molecules. The large surfaces of the plate shaped crystals correspond to the *ac* plane of the structure and measurements of the anisotropy of conduction show that the most conducting direction is in the *a* direction with an anisotropy of less than 10. Thus the electrical conduction properties and structure show the compound to be a two-dimensional conductor as distinct from the previously prepared one-dimensional metals based on square coplanar complexes.

The pressure dependence of the conductivity of the compound has been studied by Dr. Richard Friend and Mr. Ian Parker at the Cavendish Laboratory at the University of Cambridge (4). They have shown that under pressure the crystals behave as metals, that above 7 kbar pressure the transition observed at

ambient pressure at 240 K is suppressed and at the highest pressure studied (12.1 kbar) the crystals remain metallic down to 40 K. Below 40 K at this pressure, the resistance rise with temperature is relatively small and the conductivity at 1.4 K was found to be above 10 S/cm.

The effect of pressure is to squeeze the dimer monoanion pairs closer together and therefore to increase the extent of the S-S interactions. It has already been shown in organic metals that the effect of pressure is to stabilise the metallic state down to low temperatures and indeed in some instances a superconducting state may be achieved at very low temperatures.

$\text{Cs}[\text{Pd}(\text{S}_2\text{C}_2(\text{CN})_2)_2] \cdot 0.5\text{H}_2\text{O}$ is a new type of molecular metal because it is a stoichiometric metal complex with a two dimensional conducting network as distinct from the previously prepared molecular conductors based on non-integral oxidation state complexes with an essentially one-dimensional conduction pathway.

References

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- 3 M. B. Hursthouse, R. L. Short, P. I. Clemenson and A. E. Underhill, *J. Chem. Soc., Dalton Trans.*, submitted for publication
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More Organometallic Compounds

The three volume Dictionary of Organometallic Compounds and the first supplementary volume, published by Chapman and Hall, have been reviewed here during the past eighteen months. These have now been followed by the Second Supplement, again edited by Dr. Jane E. Macintyre, running to over 600 pages and priced at £145. A further 315 compounds of the platinum metals are included, all with their molecular formulae, CAS registry number and literature reference. As before, the editor has had the cooperation of a distinguished international advisory board and of a number of specialised editors for individual metals, while sources of further information are given in a substantial list of original publications covering the period up to mid-1985.