Proc. Indian Acad. Sci. (Chem. Sci.), Vol. 106, No. 3, June 1994, p. 793.
© Printed in India.

Unusual reduction products of platinum(II)azooximates

SURAJIT CHATTOPADHYAY* and ANIMESH CHAKRAVORTY
Department of Inorganic Chemistry, Indian Association for the Cultivation of Science, Calcutta 700032, India

Phenylazobenzaldoxime PhC(= NOH)NNPh(HL) reacts with K_2PtCl_4 affording the normal *trans* planar *bis* complex PtL_2, 1. Chemical or electrochemical 1e–1H reduction of 1 affords the paramagnetic complex [Pt(L)(HL)], 2, which displays reversible dimerization in solution. In the crystalline state, the complex 2 is fully dimeric. Reduction of 1 or 2 by ascorbic acid has afforded unusual species of composition PtL'_2 3, where L′ is the radical anion of the azoimine PhC(= NH)NNPh. The species 1, 2 and 3 have been characterized structurally by X-ray crystallography and the electronic structure of the species have been explored both experimentally and theoretically (EHMO). The coordinated azo-oxime and azo-imine moieties are potent acceptors of electrons and the active orbital has large azo character.

*For correspondence