Fig. 4 The series of photographs on the facing page shows the colour of a thin film of $Pd(niox)_2$ at various pressures between 0.2 and 10 GPa: (a) 0.2 GPa, (b) 1 GPa, (c) 2 GPa, (d) 3 GPa, (e) 4 GPa, (f) 6 GPa and (g) 10 GPa; the line drawing identifying the position of the palladium complex and the two reference rubies. The aperture in the gasket measures 0.3 mm from side to side

yellow green (at 5.5 to 6.5 GPa), and to pale yellow (above 7 GPa) with increasing pressure. The variation in the colour of $Pd(niox)_2$ with pressure can be interpreted to show that the absorption band which is ascribed to $4d_{z^2}$-$5p_z$ shifted toward longer wavelength at high pressures.

The relationship between the colour and the pressure is only the preliminary results of our work. The pressure ranges of the colours have not yet been determined in detail. The thickness of our sample is about 1000Å. It should be noted that the tone of a colour depends on a number of factors including thickness of the sample, the pressure transmitting medium and the pressure distribution. If the relationship between colour and pressure is studied in detail, a semiquantitative value of pressure could be obtained from the visual observation of the change in colour with pressure by a colorimetric method similar to pH testing paper. Furthermore, the pressure gradient in a high pressure cell can be directly observed in situ.

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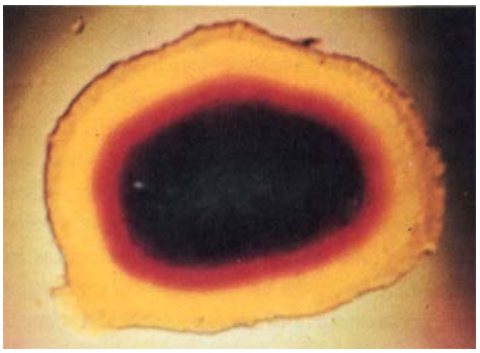

Fig. 5 A pressure gradient produced under non-hydrostatic conditions is displayed visually by the change in the colour of the sample: centre (green) about 6 GPa, middle (red) about 2 GPa, outside (yellow) 0–1 GPa

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Anti-Cancer Platinum Compounds

The platinum compound Cisplatin is now widely used for the treatment of specific cancers. However a number of adverse side effects are associated with its use, and since the late 1970s attention has been focused on the identification of other platinum drugs having less toxicity but with at least equivalent clinical activity.

This work has made significant progress and a review of the work carried out between the discovery of the anti-tumour activity of Cisplatin by B. Rosenberg and L. Van Camp in 1969 and the launch of Carboplatin, a second generation platinum drug, has recently been prepared by staff at the Johnson Matthey Technology Centre ("Second Generation Anticancer Platinum Compounds", C. F. J. Barnard, M. J. Cleare and P. C. Hydes, *Chem. Brit.*, 1986, **22**, (11), 1001–1004).

Current work is concentrating on Carboplatin and on Iproplatin, another second generation drug. Particular attention is being paid to the use of these platinum drugs in combination with radiotherapy, and to varying the mode of administration to increase their effectiveness. At the same time the search for third generation platinum complexes with higher anti-tumour activity continues.