

Cover Picture

James P. Collman, Roman Boulatov, and Geoffrey B. Jameson

The cover picture shows the metalloporphyrin heterodimer $[(\text{tpp})\text{Mo}^{\text{IV}}\text{Re}(\text{oep})]^+$ with the novel $[\text{Mo}^{\text{IV}}\text{Re}]^{5+}$ core. The core represents the first example of a quadruple bond between elements of different triads, thus proving that heterometallic quadruple bonds are not limited to the Group 6 metals. From the space-filling model it is clear that there is no interaction between the stabilizing porphyrin ligands. The ORTEP plot in a projection along the Re–Mo axis emphasizes the perfectly eclipsed geometry of the porphyrins, which is unambiguous proof of the existence of the quadruple bond in the solid state. The diamagnetism and large magnetic anisotropy of the cation, as determined by ^1H NMR spectroscopy, indicate that the quadruple bond is retained in solution. A logical and well-defined synthetic route was used to synthesize the dimer, and can be extended to other metalloporphyrins to generate further novel quadruple bonds (the picture was generated by Marina Boulan, St. Petersburg, Russia), full details are reported by J. P. Collman et al. on p. 1271 ff.

