

Synthesis and characterization of polynuclear complexes of molybdenum carbonyl derivatives with pyridine-2-carbaldehyde azine (pa) and ferrocenylyphosphines. Crystal structure of $[\text{Mo}_2(\text{CO})_6(\text{-dppf})(\text{-pa})]$ (dppf = 1,1'-bis(diphenylphosphino)ferrocene)

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Novel mono- and didentate ferrocenylyphosphines containing complexes, $[\text{Mo}_2(\text{CO})_6(\text{dfpp})_2(\text{-pa})]$ (dfpp = diferrocenylphenylphosphine) and $[\text{Mo}_2(\text{CO})_6(\text{-dppf})(\text{-pa})]$, have been isolated and characterized by infrared and electronic spectroscopy, and cyclic voltammetry. For the $[\text{Mo}_2(\text{CO})_6(\text{-dppf})(\text{-pa})]$ complex a single crystal X-ray structure analysis evidences its double bridge nature and the asymmetry of the bridging ligands due to steric constraints. In the visible region, the new compounds show strong solvatochromic bands and this effect has been evaluated by using the $E^*\text{MLCT}$ parameter. The redox behaviour of the complexes involves molybdenum and ferrocene-based oxidations and pa-based reductions. The results are compared to the previously characterized analogous complexes based on the related ligands triphenylphosphine and 1,2-bis(diphenylphosphino)ethane. © 1998 Elsevier Science Ltd. All rights reserved.