## From P<sub>4</sub> to PH<sub>3</sub> Metal Complexes by Plane Hydrolysis

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The large-scale production of  $PH_{3}$ , a valuable feedstock material for the synthesis of many organophosphorus derivatives, is hampered by difficult operational conditions. This makes conversion routes, possibly catalytic, of elemental phosphorus to phosphine highly desirable.

The monometal  $[CpRu(PPh_3)_2(\eta^1-P_4)]PF_6$  (1) and the dimetal  $[\{CpRu(PPh_3)_2\}_2(\mu,\eta^{1:1}-P_4)](PF_6)_2$  (2) P<sub>4</sub> derivatives, respectively containing a monodentate and bridging P<sub>4</sub> molecule, surprisingly undergo hydrolysis in very mild conditions yielding the PH<sub>3</sub> complex  $[CpRu(PPh_3)_2(PH_3)]PF_6$  (3) in stoichiometric amount. Remarkably, this behaviour had not been observed for the Cp\* analog of 1 [1]. The structures of 1-3 have been determined; this should help to rationalise the observed reactivity of 1 and 2, which appears to disclose new paths of phosphorus chemistry.

[1] de los Rios I., Hamon J.-R., Hamon P., Lapinte C., Toupet L., Romerosa A., Peruzzini M., Angew. Chem. Int. Ed., 2001, 40, 3910.

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