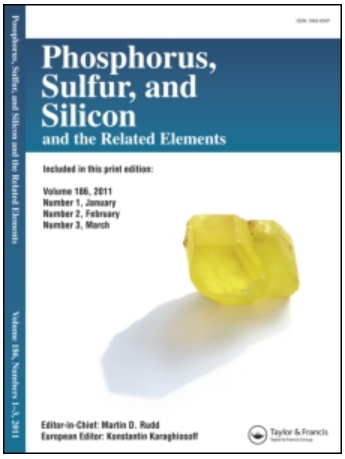

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Syntheses of Metallaphosphorane Complexes and Berry Pseudorotation

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SYNTHESES OF METALLAPHOSPHORANE COMPLEXES AND BERRY PSEUDOROTATION

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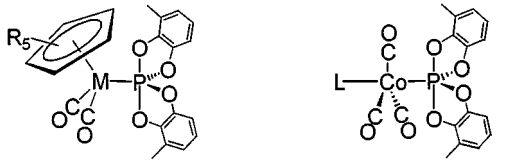
Iron-, ruthenium-phosphoranes $Cp'(CO)_2M\{P(OC_7H_6O)_2\}$*(*$Cp' = \eta^5$-$C_5H_5$, η^5-C_5Me_5*; M = Ru, Fe), and cobalt-phosphoranes* $L(CO)_3Co\{P(OC_7H_6O)_2\}$*(*$L = PPh_3, PPh_2Me$*) were prepared. From the variable-temperature* ^{31}P *NMR studies, the activation parameters for Berry pseudorotation were determined.*

Keywords: Activation parameter; Berry pseudorotation; metallaphosphorane

Ruthenium phosphorane with two 3-methylcatecholates on a phosphorane phosphorus was recently reported to be suitable to estimate a barrier to Berry pseudorotation.[1] In order to investigate the influence of a transition metal fragment on Berry pseudorotation process, we synthesized some related iron-, ruthenium-, and cobalt-phosphoranes and determined the activation parameters for Berry pseudorotation. For the iron- and ruthenium-phosphoranes, changing the substituent from Cp to Cp^* increases the activation parameters.



SCHEME 1

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[1] H. Nakazawa, K. Kawamura, K. Kubo, and K. Miyoshi, *Organometallics*, **18,** 2961 (1999).