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Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713618290>

Syntheses of Metallaphosphorane Complexes and Berry Pseudorotation

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Online publication date: 27 October 2010

To cite this Article Nakazawa, Hiroshi, Ogawa, Tsuyoshi, Kawamura, Kazumori and Miyoshi, Katsuhiko(2002) 'Syntheses of Metallaphosphorane Complexes and Berry Pseudorotation', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 177: 8, 2163 – 2164

To link to this Article: DOI: 10.1080/10426500213409

URL: <http://dx.doi.org/10.1080/10426500213409>

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SYNTHESES OF METALLAPHOSPHORANE COMPLEXES AND BERRY PSEUDOROTATION

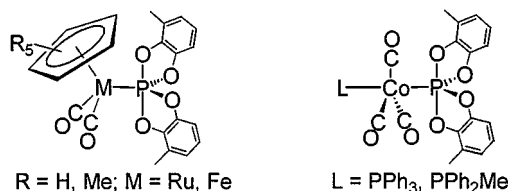
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(Received July 29, 2001; accepted December 25, 2001)

Iron-, ruthenium-phosphoranes $Cp'(CO)_2M\{P(OC_7H_6O)_2\}(Cp' = \eta^5-C_5H_5, \eta^5-C_5Me_5; M = Ru, Fe)$, 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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