SYNTHESIS AND CHARACTERIZATION OF
[Ru(Bu^tC_5H_4)(CO)_2]_2, [Ru(1,3-di-Bu^tC_5H_3)(CO)_2]_2, S-BONDED
THIOCARBOXYLATE DERIVATIVES OF Ru(Bu^tC_5H_4)(CO)_2
SCOR AND Se-BONDED SELENOCARBOXYLATE
DERIVATIVES OF Ru(Bu^tC_5H_4)(CO)_2SeCOR

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B.Sc. (Chemistry) 1990
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Thesis submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Science at Yarmouk University.

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August 2, 1993
SYNTHESIS AND CHARACTERIZATION OF
[Ru(Bu⁺⁴C₅H₄)(CO)₂]₂, [Ru(1,3-di-Bu⁺⁴C₅H₃)(CO)₂]₂, S-BONDED
THIOCARBOXYLATE DERIVATIVES OF Ru(Bu⁺⁴C₅H₄)(CO)₂
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ABSTRACT

The new substituted cyclopentadienyl organoruthenium dimers
[Rucp⁺*(CO)₂]₂ (1) and [RuCp⁺*(CO)₂]₂ (2) (Cp⁺*=t-butyl C₅H₄, Cp⁺*=1,3-
di-t-butyl C₅H₃) were prepared from the reaction of Ru₃(CO)₁₂ with t-
butylcyclopentadiene, or 1,3-di-t-butylcyclopentadiene in boiling n-
heptane.

Organoruthenium sulfanes have been prepared from the reaction
of 1 with elemental sulfur in refluxing toluene/benzene mixture or
upon irradiation in THF solution, whereas organoruthenium selenanes
were prepared by refluxing 1 with elemental selenium.

These organoruthenium sulfane and selenanes react readily with
acid chlorides, RCOCl, to give the S-bonded monothiocarboxylato
derivatives [Ru(CO)₂Cp⁺*SCOR](R=3,5-(NO₂)₂C₆H₃, 3-(NO₂)C₆H₄ and 4-
(NO₂)C₆H₄] and Se-bonded monoselenocarboxylato derivatives
[RuCp⁺*(CO)₂SeCOR] (R=3,5-(NO₂)C₆H₃, 4-(NO₂)C₆H₄, and 3-(NO₂)(C₆H₄)
. The isolated compounds were characterized by IR, ¹H-NMR spectra and
elemental analyses.