

II

PREPARATION, STRUCTURE AND REACTIVITY OF XENON-CARBON BOND

H. J. Frohn and St. Jakobs

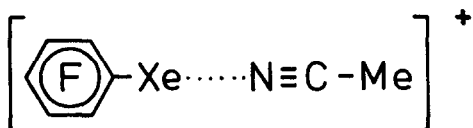
Fachgebiet Anorganische Chemie, University of Duisburg, Lotharstrasse 65,
D-4100 Duisburg 1 (F.R.G.)

Using the concept of nucleophilic substitution which had been successful for the introduction of arylgroups into halogenfluorides [1] we were able to synthesize the pentafluorophenylxenon(II)cation [2].

With $B(C_6F_5)_3$ as aryl-transfer reagent $[(C_6F_5)Xe]^+[(C_6F_5)_nBF_{4-n}]^-$ ($n = 0, 1$ and 2) could be prepared in yields up to 90 % as colourless solids, which are soluble in coordinating solvents.

In MeCN-solution xenon-carbon bond was demonstrated by ^{129}Xe -, ^{19}F -, and ^{13}C -n.m.r.-spectroscopy. The anions are characterized by ^{19}F -, ^{13}C -, and ^{11}B -n.m.r.-spectroscopy.

Single-crystals from MeCN-solution show linear coordination of the $[C_6F_5Xe]^+$ -cation by MeCN and no Xe(II)-F contacts.



- Typical reactions of the aryl-xenon(II) salts are
- electrophilic pentafluorophenylation of soft bases (oxidative fluorination)
 - metathesis reactions with Lewis acids.

1 W. Breuer and H. J. Frohn; J. Fluorine Chem. **34**, (1987) 443.

2 H. J. Frohn and St. Jakobs; J. Chem. Soc. Chem. Commun., in press.