NOVEL N-COORDINATED ORGANOTELLURENIUM AND ORGANOTELLURONIUM CATIONS

Lukáš Doležal[a], Martin Hejda[a], Libor Dostál[a], Aleš Růžička[a], Jens Beckmann[b]

[a]Department of General and Inorganic Chemistry, Faculty of Chemical Technology,
University of Pardubice, Studentská 573, CZ - 532 10, Pardubice, Czech Republic
lukas.dolezal4@student.upce.cz
[b]Institut für Anorganische Chemie und Kristallographie, Universität Bremen,
Leobener Straße 7, 28359 Bremen, Germany

Despite the fact that there are already known some representatives of organotellurenium and organotelluronium cationic species,[1-8] so far, their reactivity has not been studied in detail. During our look into the interesting reactivity of these ionic compounds we stumbled upon the ability to activate a B-H bond in carborane cluster.[9] This was the impulse to extend the ranks of known cationic organometallic compounds with Te(II) as a central atom with various chelating and pincer ligands including their subsequent oxidation yielding corresponding cationic Te(IV) species to further study their reactivity. These compounds show impressive levels of Lewis acidity as judged not only by highly deshielded values of δ in ^{125}Te NMR, but also by the Gutmann-Beckett method. These results together with outcomes of their extreme tendency to hydrolyse will be presented at the conference.

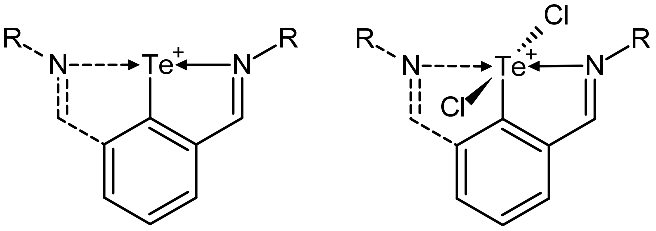

Figure 1. General structures of synthetized cationic compounds.

The authors wish to thank the Czech Science Foundation (project No. 22-17230S) for the financial support.

---

[1] Poleschner, H.; Seppelt K. *Angew. Chem.* **2008**, 47 (34), 6461–6464.

[2] Sugamata K.; Sasamori, T.; Tokitoh, N. *Eur. J. Inorg. Chem.* **2012**, 5, 775–778.

[3] Fujihara, H.; Mima, H.; Furukawa, N. *J. Am. Chem. Soc.* **1995**, 117, 10153–10154.

[4] Deka, R.; Gupta, A; Sarkar, A.; Butcher, R. J.; Singh, H. B. *Eur. J. Inorg. Chem.* **2020**, 4170–4179.

[5] Beleaga, A.; Bojan, V. R.; Pöllnitz, A.; Rat, C. I.; Silvestru C. *Dalton Trans.* **2011**, 40, 8830–8838.

[6] Beckmann, J.; Bolsiger, J.; Duthie, A.; Finke, P. *Organometallics* **2012**, 31, 238−245.

[7] Minkin, V. I.; Sadekov, I. D.; Maksimenko, A. A.; Kompan, O. E.; Struchkov, Y. T. *J. Organomet. Chem.* **1991**, 402 (3), 331-348.

[8] Hejda, M.; Duvinage, D.; Lork, E.; Jirásko, R.; Lyčka, A.; Mebs, S.; Dostál, L.; Beckmann, J. *Organometallics* **2020**, 39, 8, 1202–1212.

[9] Hejda, M.; Duvinage, D.; Lork, E.; Lyčka, A.; Černošek, Z.; Macháček, J.; Makarov, S.; Ketkov, S.; Mebs, S.; Dostál, L.; Beckmann, J. *Chem. Eur. J.* **2021**, 27, 14577–14581.