Poster Presentation

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Se-N chemistry: Revisiting an old molecule in the design of novel compounds

N. Lock[1], J. Matussek[1], D. Stalke[1]

[1]*Georg-August Universität Göttingen, Institut für Anorganische Chemie, Göttingen, Germany*

Chalcogenide chemistry is rich and diverse: The large variety of molecular sulfur and selenium compounds can be ascribed to their multiple stable oxidation states and large radius enabling high coordination. Sulfur-nitrogen chemistry is thoroughly explored and well-understood; polyimido sulfur species S(NR)n with charge m- (n = 2, 3, 4; m = 0, 2) are analogues of SOn molecules (with charge: m-) in which oxygen has been replaced by isovalent NR imido groups [1]. These compounds have been studied in depth and have been demonstrated to be versatile ligand systems which form multifaceted potentially catalytic metal complexes and compounds with lithium organics [2]. Selenium-nitrogen chemistry is comparatively less developed than sulfur-nitrogen chemistry despite of significant contributions to the field [3]. This may be ascribed to the rich redox chemistry of selenium in addition to its ability to polymerize, unfortunately none of these properties are easily controlled. A crucial parameter in the development of sulfur-nitrogen chemistry is attributed to the access to sulfur diimides S(NR)2 and sulfur triimides S(NR)3. Therefore, our starting point in exploring new directions of selenium-nitrogen chemistry was to revisit Se(NtBu)2 (tBu = tertbutyl), which has been used as ligand for metal complexes, but also discussed in large detail with respect to structural geometry and stability. Herein, we are presenting a study of selenium-nitrogen chemistry based on Se(NtBu)2.

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