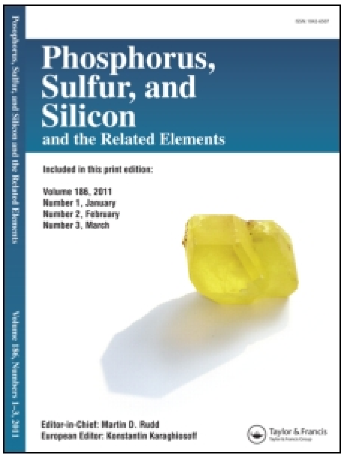

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MANIPULATION OF ANTIMONY IMIDO ARCHITECTURES

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MANIPULATION OF ANTIMONY IMIDO ARCHITECTURES

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Group 15 imido complexes have been shown to be important reagents in both inorganic and organic synthesis. Compounds of the type $R_3E{=}NR'$ (E=P, As, Sb) have received particular interest as they are known to convert C=O to $C{=}NR'$ in an aza-Wittig reaction.[1] As a consequence, the nature of the E=N bond has been the subject of much discussion; in particular the degree of multiple bond character that is present.[2] Reports of iminostiboranes are limited to only a few examples and further synthetic studies would be of value.

The majority of work in this area has concentrated on antimony(III) imido complexes and has revealed an interesting range of architectures from dimeric species to $Sb_{12}(NR)_{18}$ macrocycles.[3,4] Our work in this area has uncovered the first structurally characterised example of an $Sb_4(NR)_6$ compound ($R = C_{10}H_7$) (**1**), which is arranged as an adamantanoid cage, isostructural and isolobal with P_4O_6 and $P_4(NMe)_6$.[5] Further work has focussed on the synthesis of antimony(V) imido complexes with the synthesis of a dimeric compound $ClPh_2Sb(\mu\text{-}NBz)_2SbPh_2Cl$ (**2**) from the reaction of BzN(H)Li with Ph_2SbCl_3 in the ratio 3:2. Reaction of this complex with equimolar amounts of $LiN(SiMe_3)_2$ has led to the synthesis and structural characterisation of the first example of an antimony(V) nitride-containing complex (**3**). This is significant as nitride-containing complexes of main group elements, in their highest oxidation state, particularly the heaviest elements, are rare.

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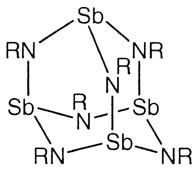

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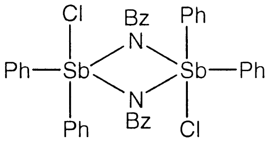

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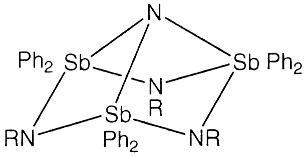

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