

## MS27-P06 | THE BENEFITS OF CU-K<sub>β</sub> RADIATION IN ELUCIDATING THE MOLECULAR STRUCTURE OF POLYPNICTOGEN CATIONS

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Cationic polypnictogen frameworks, which are not completely saturated with organic substituents, are a relatively rare class of compounds, with metal fragment stabilised  $[P_{10}]^{2+}, [1] [E_4]^{2+}$  (E = Pnictogen) [2] and the homoleptic  $[P_9]^+$  being some of the most prominent representatives [3]. In depth crystallographic studies of compounds containing such species are often hampered by the presence of so called WCAs (WCA = weakly coordinating anion) which are needed for their stabilisation. One of the least coordinating, yet crystallographically often problematic WCAs is the  $[TEF]^-$  anion ( $[TEF]^- = [Al(OC(CF_3)_3)_4]^-$ ). Its sphere-like topology can lead to very high degrees of disorder within the Perfluorptertbutyl – groups which often cannot be resolved properly by using standard wavelengths. Compared to Cu–K<sub>α</sub> radiation, Cu–K<sub>β</sub> radiation has the advantage of a better resolution limit (0.72 Å), while still allowing for relatively high intensity measurements compared to Mo–K<sub>α</sub> radiation. Thus, utilisation of Cu–K<sub>β</sub> radiation is beneficial for the X-ray crystallographic investigation and allows a better structural solution of compounds containing highly disordered WCAs such as  $[TEF]^-$ . This will be demonstrated by a comparison of X-ray crystallographic data of compounds of the general formulae  $[Cp''Ni(\eta^3-P_4R_2)][TEF]$  obtained by using Cu–K<sub>α</sub>, Cu–K<sub>β</sub> and Mo–K<sub>α</sub> radiation.

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