

Supporting Information

The Family of tetranuclear $\text{Nb}_4\text{OI}_{12-x}$ Clusters ($x = 1, 2$): From the molecular $\text{Nb}_4\text{OI}_{12}$ cluster to extended chains and layers

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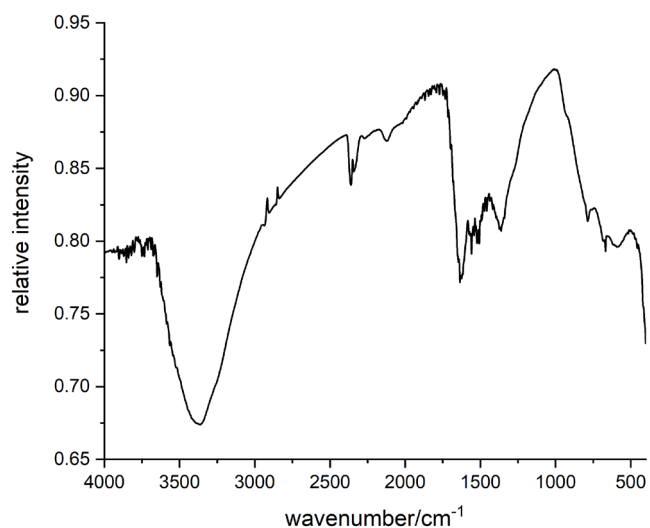


Figure S1. IR spectrum of the residual powder after the reduction of carbodiimide.

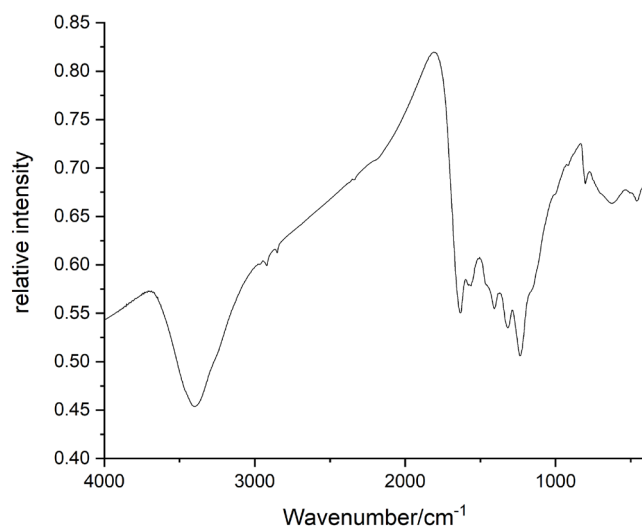


Figure S2. IR spectrum of the reaction product of amorphous C_3N_4 , made by a literature method.^[1]

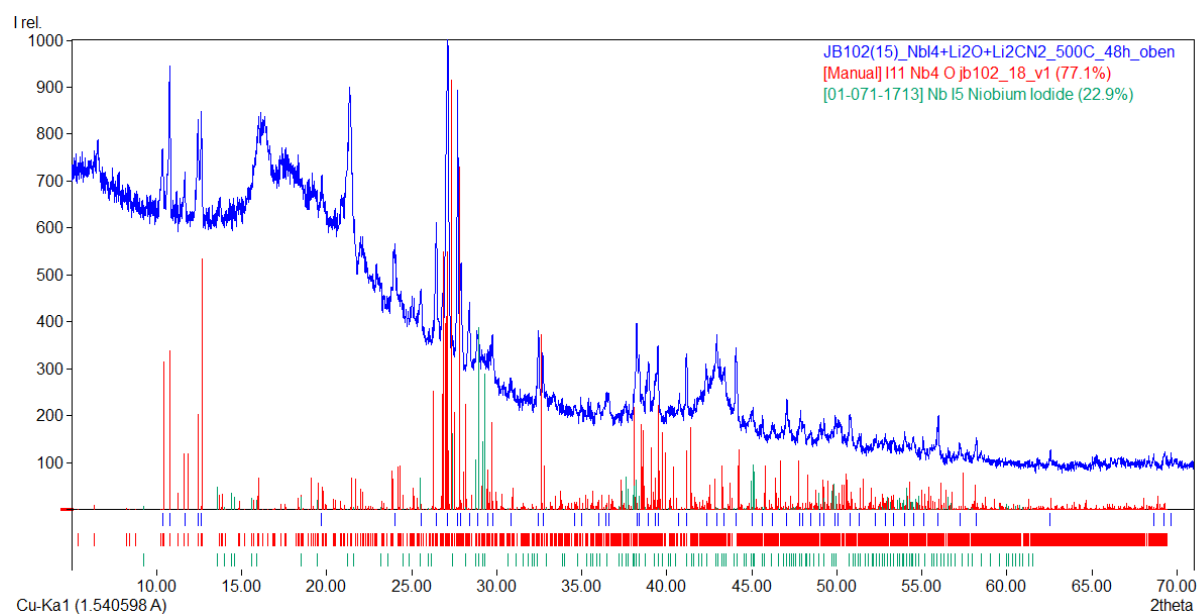


Figure S3. Measured powder X-ray diffraction pattern of $b\text{-Nb}_4\text{OI}_{11}$ with $\text{Cu-K}\alpha_1$ -radiation. In blue is the measured powder pattern, red corresponds to the calculated reflections of the single crystal X-ray measurement of $b\text{-Nb}_4\text{OI}_{11}$ and in green are the Bragg positions of coproduced NbI_5 .

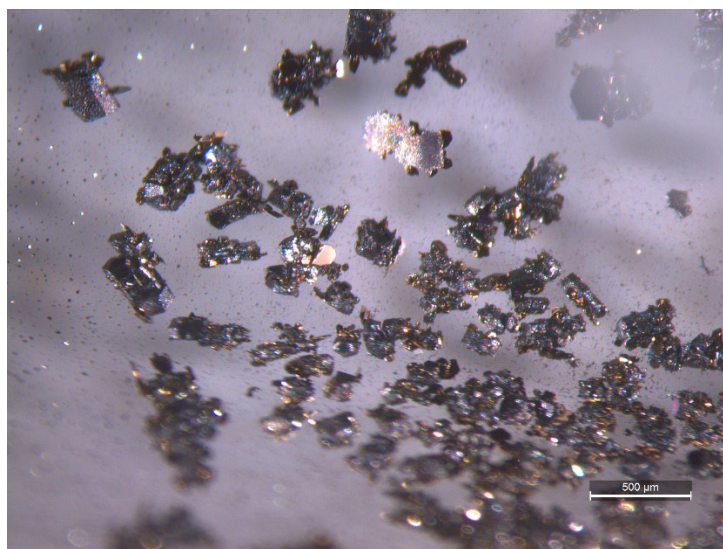


Figure S4. Example of black $b\text{-Nb}_4\text{OI}_{11}$ crystals along with some NbI_5 (golden plates).

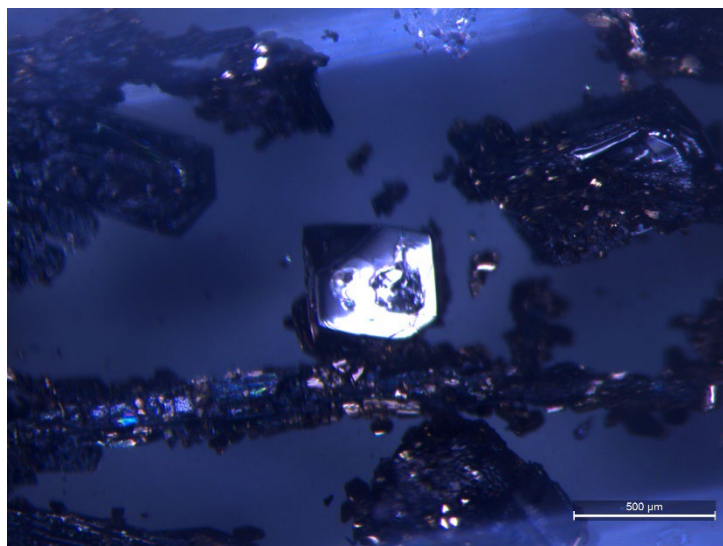


Figure S5. Example of a black Nb₄OI₁₂ crystal along with some b-Nb₄OI₁₁ aside.

- [1] H. Zhao, X. Chen, C. Jia, T. Zhou, X. Qu, J. Jian, Y. Xu, T. Zhou, *Materials Science and Engineering: B* **2005**, *122*, 90-93.