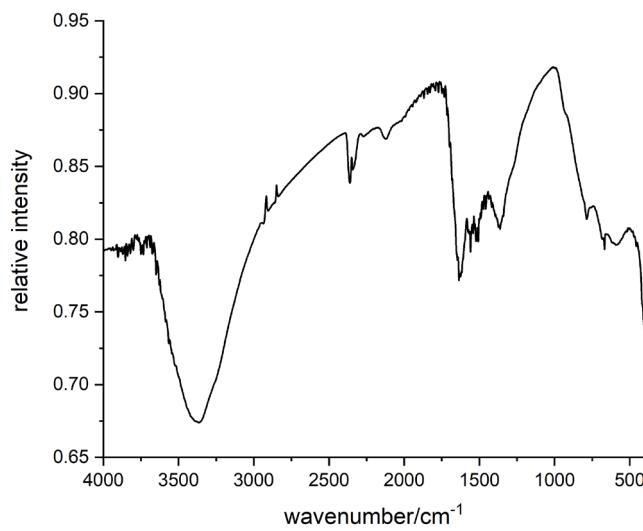


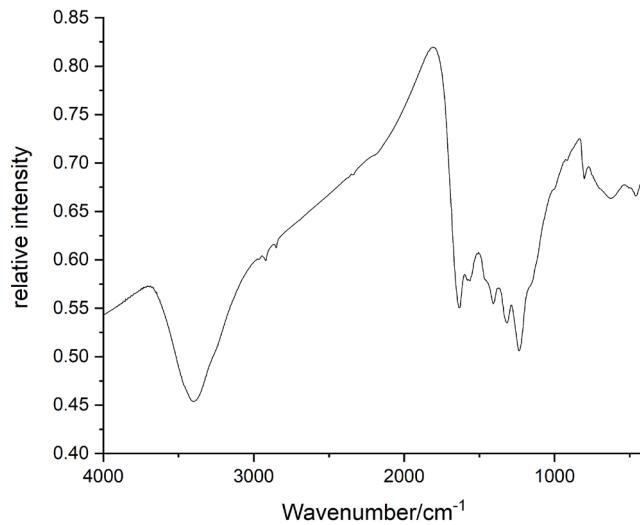
## Supporting Information

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

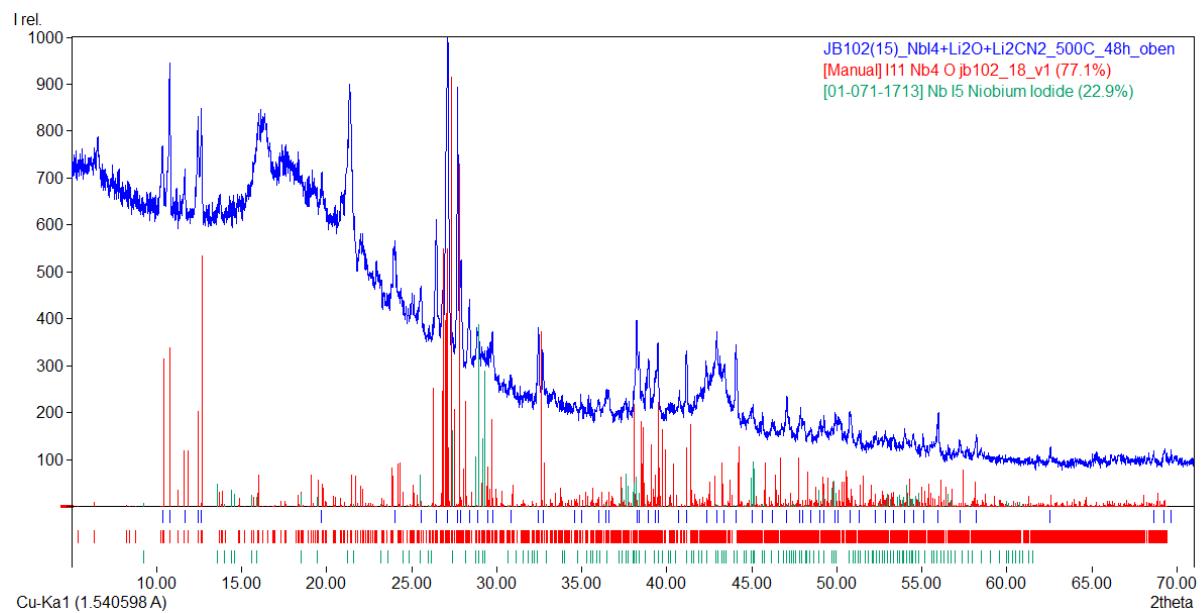
Jan Beitlberger,<sup>a</sup> Mario Martin,<sup>b</sup> Marcus Scheele,<sup>b</sup> Patrick Schmidt,<sup>a</sup> Markus Ströbele,<sup>a</sup> and H.-Jürgen Meyer <sup>\*a</sup>



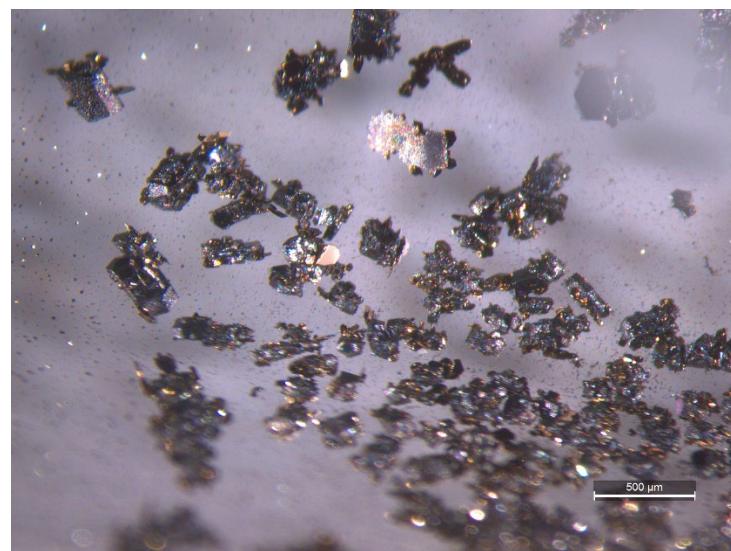
**Figure S1.** IR spectrum of the residual powder after the reduction of carbodiimide.



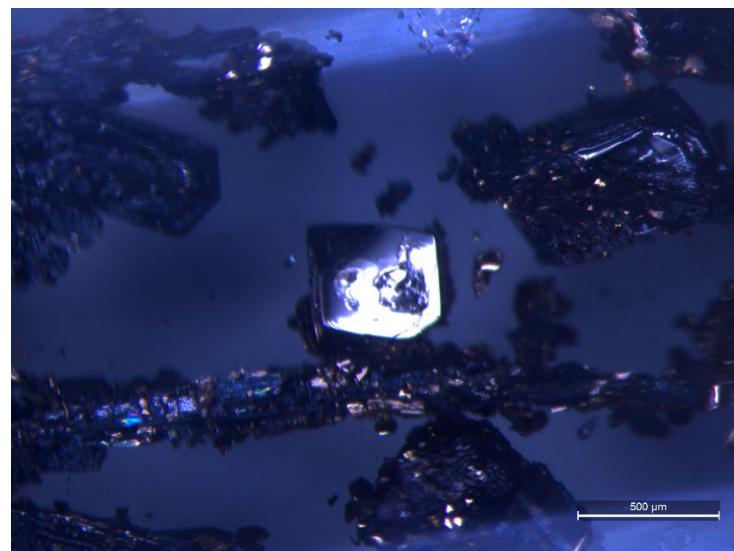
**Figure S2.** IR spectrum of the reaction product of amorphous  $\text{C}_3\text{N}_4$ , made by a literature method.<sup>[1]</sup>



**Figure S3.** Measured powder X-ray diffraction pattern of b-Nb<sub>4</sub>Ol<sub>11</sub> with Cu-K<sub>α1</sub>-radiation. In blue is the measured powder pattern, red corresponds to the calculated reflections of the single crystal X-ray measurement of b-Nb<sub>4</sub>Ol<sub>11</sub> and in green are the Bragg positions of coproduced NbI<sub>5</sub>.



**Figure S4.** Example of black b-Nb<sub>4</sub>Ol<sub>11</sub> crystals along with some NbI<sub>5</sub> (golden plates).



**Figure S5.** Example of a black Nb<sub>4</sub>Ol<sub>12</sub> crystal along with some b-Nb<sub>4</sub>Ol<sub>11</sub> 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.