Building scheme for NSI

1. Periodic Building Unit – 2. Connection mode – 3. Projections of the unit cell content
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1. Periodic Building Unit:

NSI can be built using the zigzag (zz) chain (bold in Fig.1) running parallel to ***b***. The repeat distance along the zigzag chain is about 5.2 Å. The repeat unit consists of 2 T atoms. Three zz chains are connected to an infinite building unit. A two-dimensional Periodic Building Unit (PerBU) is obtained when infinite building units, related by a shift of ½(***a*** + ***b***), are connected along ***a*** through 5-rings as shown in Figure 1. [Compare this PerBU with the PerBU in **BIK** and **CAS**]

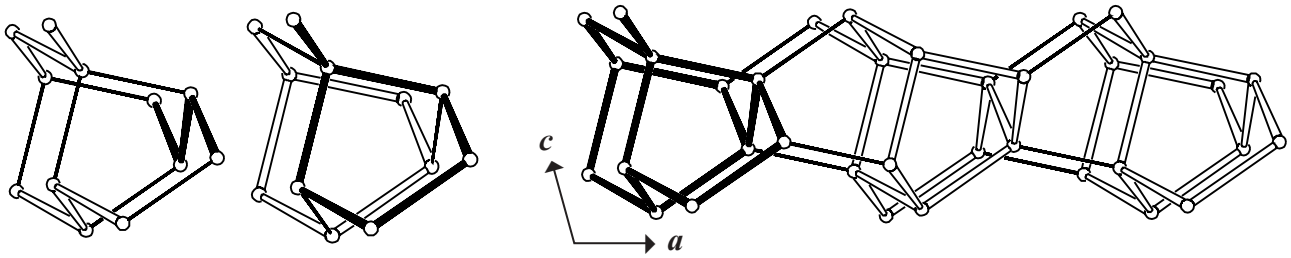

Figure 1. Infinite building unit constructed from three zz chains (left) and from 5-1 units (middle; see also: **Alternative description**) seen along the chain axis ***c*** and PerBU in **NSI** (right).

2. Connection mode:

Neighboring PerBUs, related by a pure translation along ***c***, are connected along ***c*** through 6-rings and 8-rings as illustrated in Figure 2.

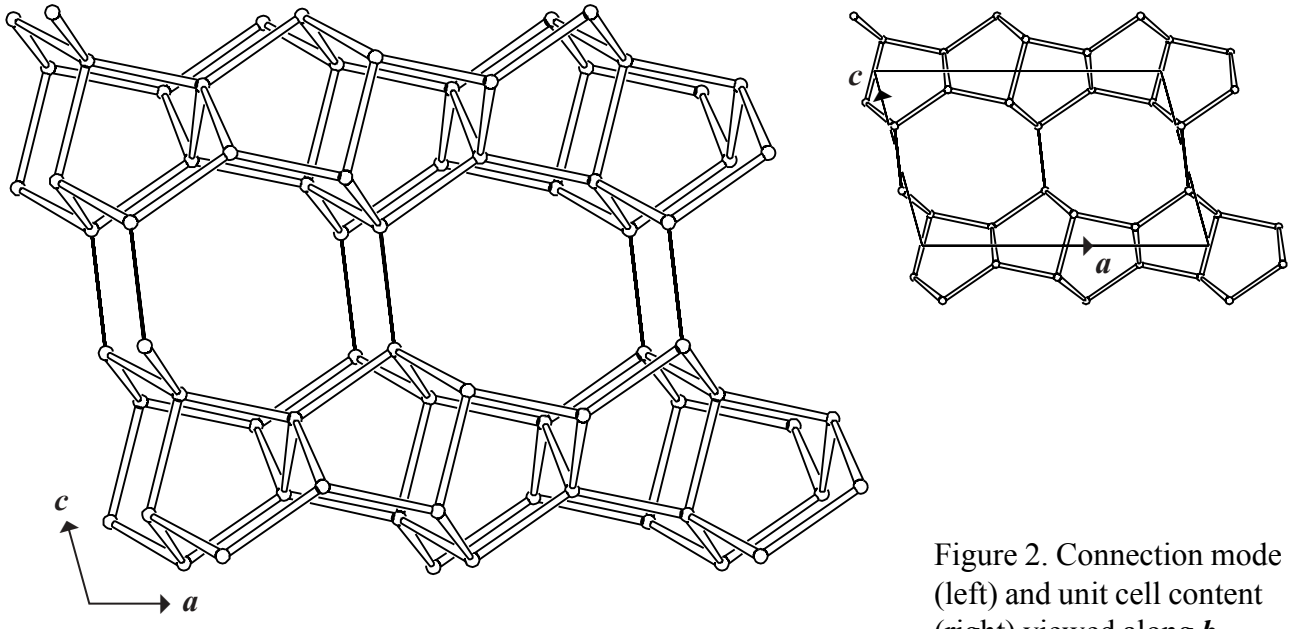

Figure 2. Connection mode (left) and unit cell content (right) viewed along ***b***.

3. Projections of the unit cell content: See Figure 2.

4. Channels and/or cages:

The non-interconnecting 8-ring channels in **NSI**, depicted in Figure 4, are parallel to ***b***. The **pore descriptor** is added. The channel is topologically equivalent to the channel in **BIK**.

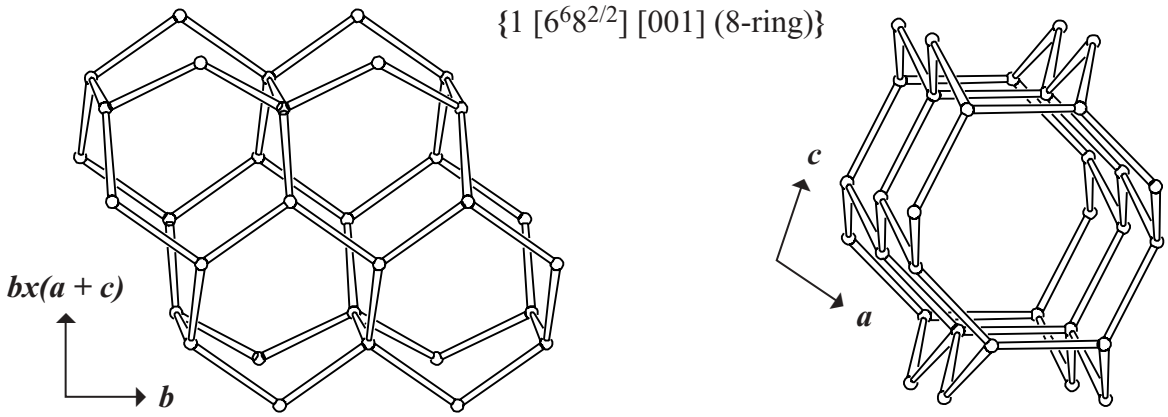

Figure 4. Channel viewed along [101] (left) and along ***b*** (right).

5. Supplementary information:

Other framework types containing zigzag chains
In several framework types at least one of the unit cell dimensions is about n*5.2 Å (where n = 1, 2, 3, etc.). In many cases this indicates the presence of zigzag chains.
In the **INTRO** pages links are given to detailed descriptions of these framework types (choose: **Zigzag chains**). There is also a link provided to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix**; **Figure 1**).

Alternative description using (modified) 5-rings
Several framework types, like **NSI**, can be constructed using (modified) 5-rings.
In the **INTRO** pages links are given to detailed descriptions of these framework types (choose: **5-Rings**). There is also a link provided to a summary of the Periodic Building Units used in the building schemes of these framework types (choose: **Appendix**; **Figure 6**).