

Building scheme for BIK



1. Periodic Building Unit – 2. Connection mode – 3. Projections of the unit cell content
4. Channels and/or cages – 5. Supplementary information

1. Periodic Building Unit:

BIK can be built using the zigzag (zz) chain (bold in Fig. 1) running parallel to c . 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 are connected along $[110]$ into a layer of (fused) 6-ring chairs decorated with additional zz chains as shown in Figure 1. [Compare this PerBU with those in [CAS](#) and [NSI](#)]

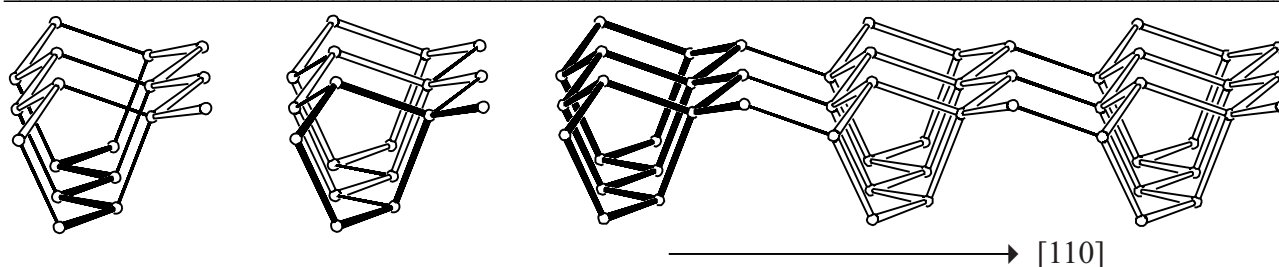


Figure 1. Infinite building unit constructed from three zz chains (left) and from 5-1 units (middle; see also: [Alternative description](#)) seen along the chain axis c and PerBU in **BIK** (right).



2. Connection mode:

Neighboring PerBUs, related by a pure translation along a , are connected along a through 5-rings. Two zz chains of the infinite building unit are involved in the (fused) 6-ring layer and the third zz chain (in bold) connects the 6-ring layers. [Compare this connection mode with the connection modes in [CAS](#) and [JBW](#)]

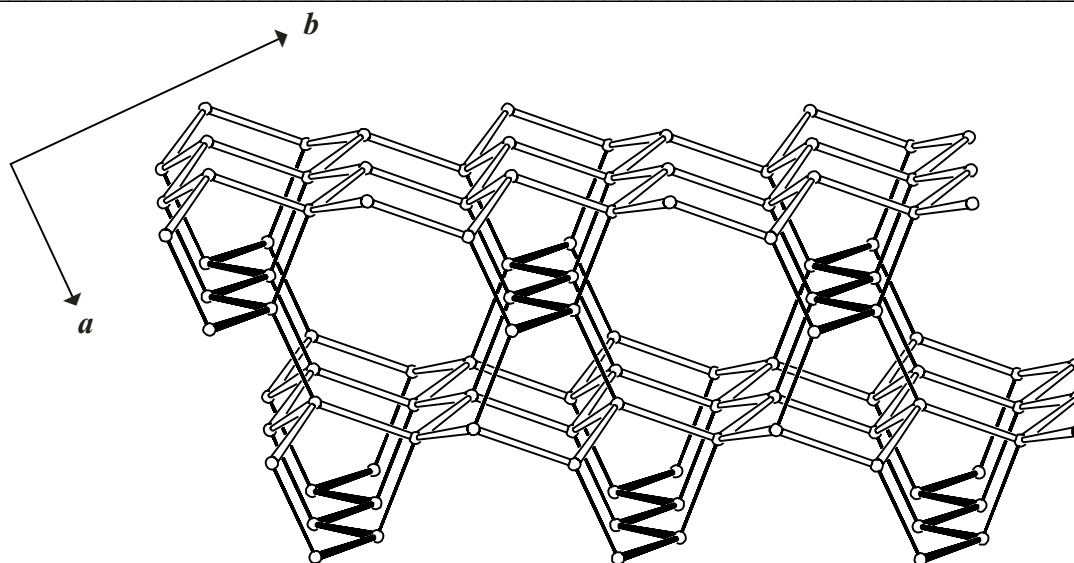
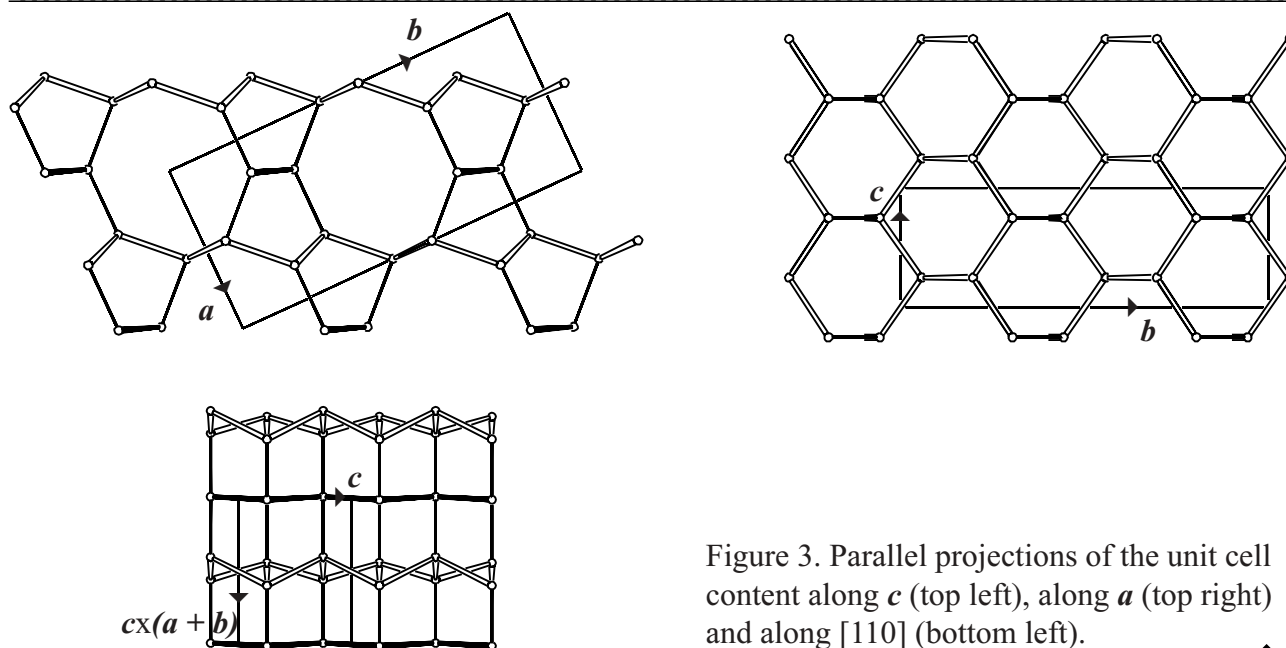


Figure 2. Connection mode in **BIK** viewed along c .



3. Projections of the unit cell content:



4. Channels and/or cages:

The 8-ring channel in **BIK**, depicted in Figure 4, is parallel to c . The **pore descriptor** is added. The channel is topologically equivalent to the channel in **NSI**.

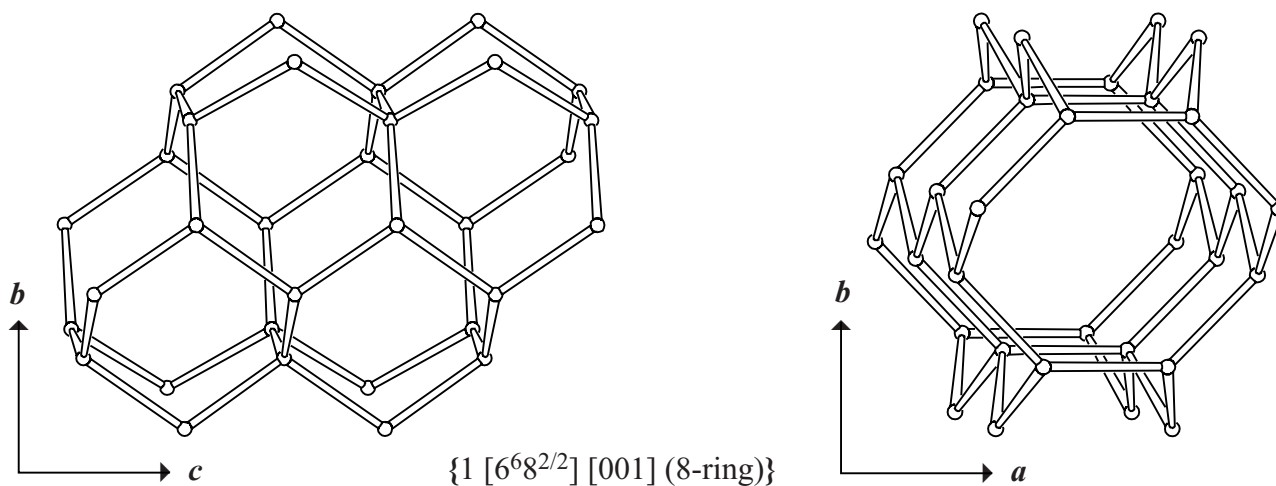


Figure 4. Channel viewed along b (left), and along c (right).

5. Supplementary information:

Other framework types containing zigzag chains

In several framework types at least one of the unit cell dimensions is about $n \cdot 5.2 \text{ \AA}$ (where $n = 1, 2, 3, \text{ etc.}$). 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 **BIK**, 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**).

