

Building scheme for CFI



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:

CFI can be built using the zigzag chain (bold in Fig.1 (left)) running parallel to b . The repeat distance along the zigzag chain is about 5.2 Å. The repeat unit consists of 2 T atoms. The one-dimensional Periodic Building Unit (PerBU) is obtained when eight zigzag chains are connected into a cylindrical pore with a 14-ring window. The cylinder wall consists of fused 6-rings. [Compare this PerBU with the PerBUs in **GON**, **OSI** and **VET**]. An alternative PerBU consists of 5-[1,1,1] units (bold in Fig.1 (right)). [See **Alternative description**]

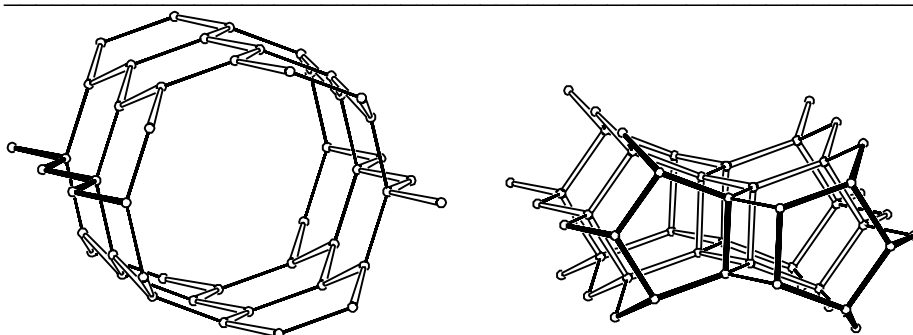


Figure 1. Cylindrical PerBU constructed from eight zigzag chains (left) and PerBU constructed from 5-[1,1,1] units (right) viewed along b .



2. Connection mode:

Neighboring PerBUs, related along a by pure translations and along c by a shift of $\frac{1}{2}(a + b + c)$, are connected along a through double zigzag chains and along c through (fused) 5- and 6-rings as illustrated in Figure 2. Layers of (fused) 6-ring chairs and 6-ring boats are formed parallel to (100). [Compare these layers with the PerBUs in **BIK** and **CAS**]

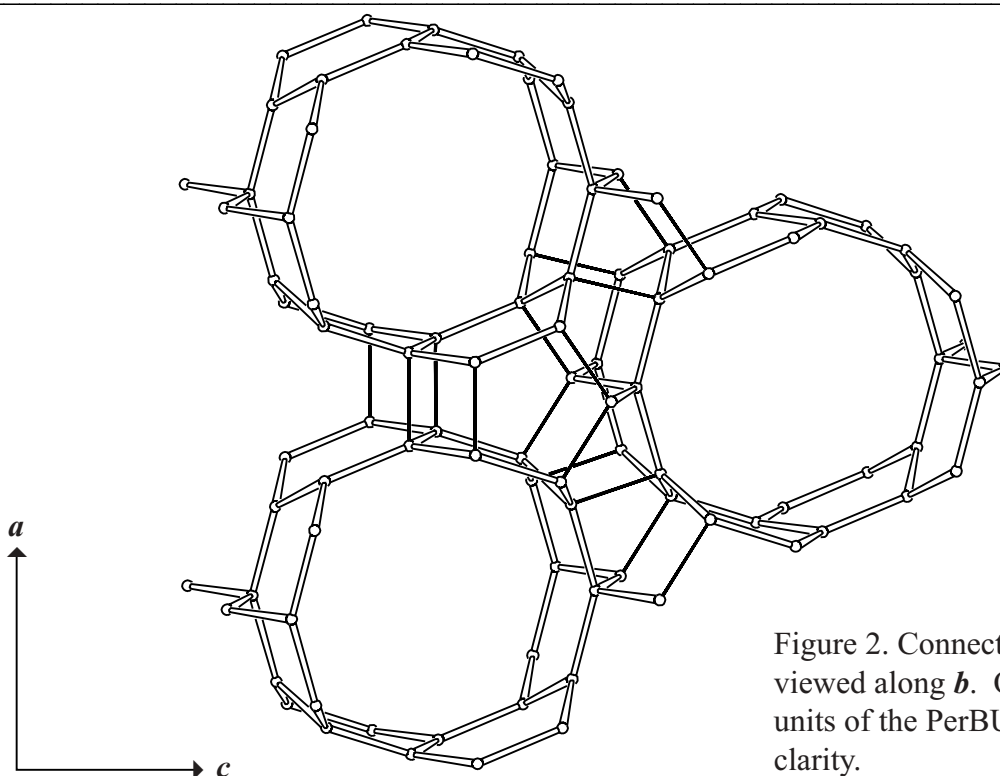
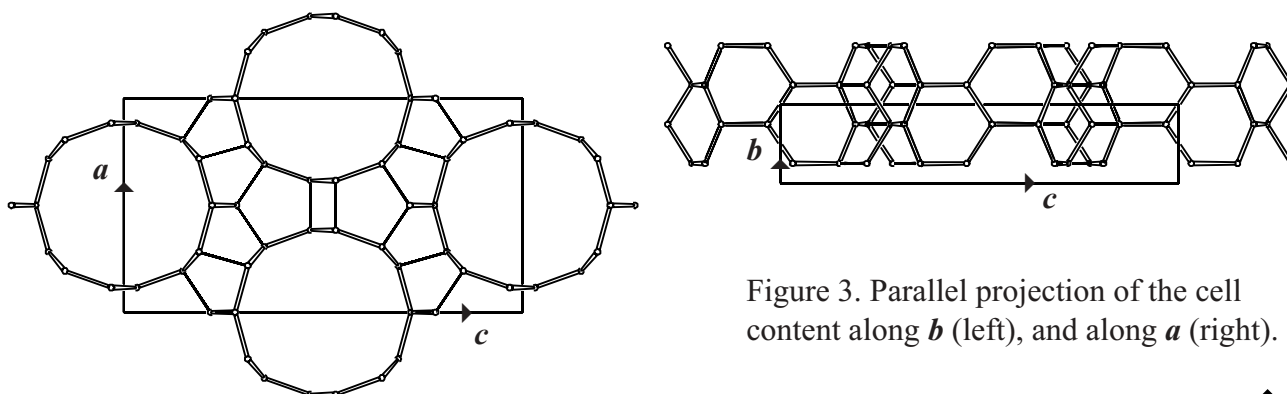


Figure 2. Connection mode in CFI viewed along b . Only two repeat units of the PerBUs are drawn for clarity.



3. Projections of the unit cell content:



4. Channels and/or cages:

Channels are parallel to b and are equal to the PerBU. The channel wall consists of fused 6-rings as depicted in Figure 4. The **pore descriptor** is added in Figure 4.

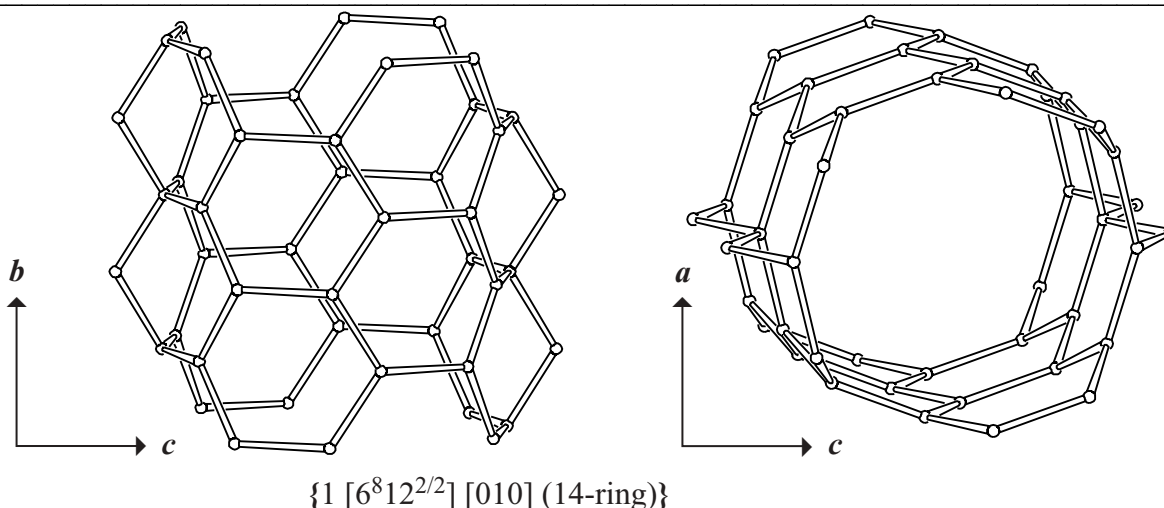


Figure 4. Channel in CFI in viewed along a (left), and along b (right).

5. Supplementary information:

Other framework types containing zigzag chains

In several framework types at least one of the unit cell dimensions is about $n \cdot 5.2 \text{ \AA}$ (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 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 CFI, 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**).