

Building scheme for VFI



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

1. Periodic Building Unit:

VFI can be built using the crankshaft chain (bold in Fig.1 (left)) running parallel to c . The repeat distance along a crankshaft chain varies between 8.4-9.9 Å. The repeat unit consists of 4 T atoms. A one-dimensional Periodic Building Unit (PerBU) is obtained when nine crankshaft chains are connected into a channel with a 18-ring aperture. . The PerBU can also be built from 6-rings (bold in Fig.1 (right)). The channel wall consists of fused 6-rings.

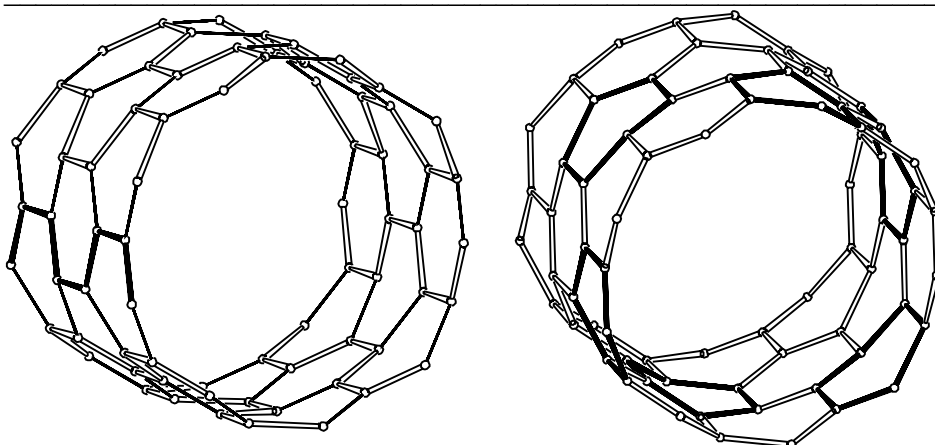


Figure 1. PerBU in VFI, viewed along c , constructed from nine crankshaft chains (left) and from six 6-rings (right).



2. Connection mode:

Neighboring PerBUs, related by pure translations along a , and b , are connected through triple crankshaft chains (Figure 2). [In AFI, the triple chains are replaced by double crankshaft chains]

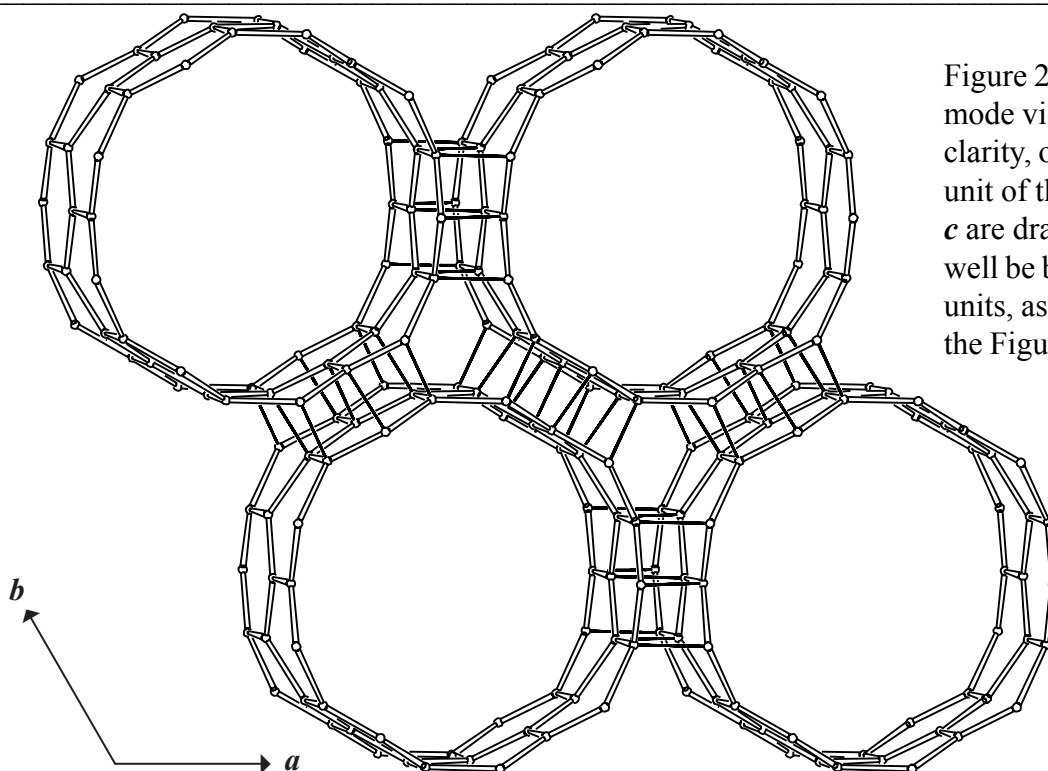


Figure 2. Connection mode viewed along c . For clarity, only $1\frac{1}{2}$ repeat unit of the PerBUs along c are drawn. VFI can as well be built using 4-2 units, as can be seen from the Figure.



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

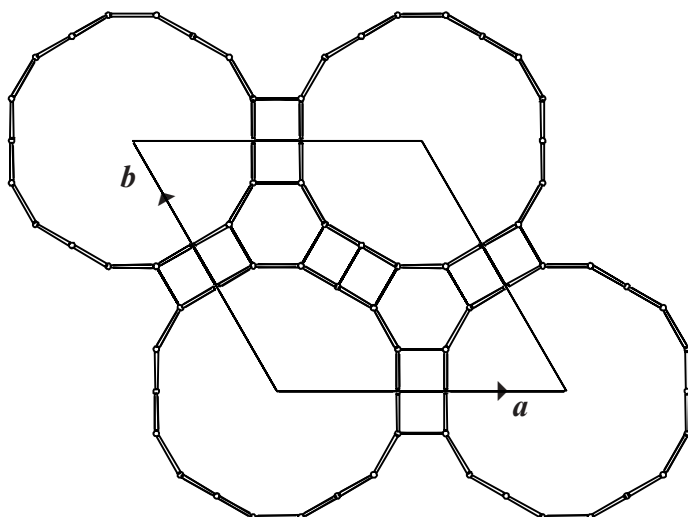


Figure 3. Unit cell content projected along c .

4. Channels and/or cages:

Non-interconnecting one-dimensional channels with 18-ring apertures are parallel to c . One channel is depicted in Figure 4. The **pore descriptor** is added.

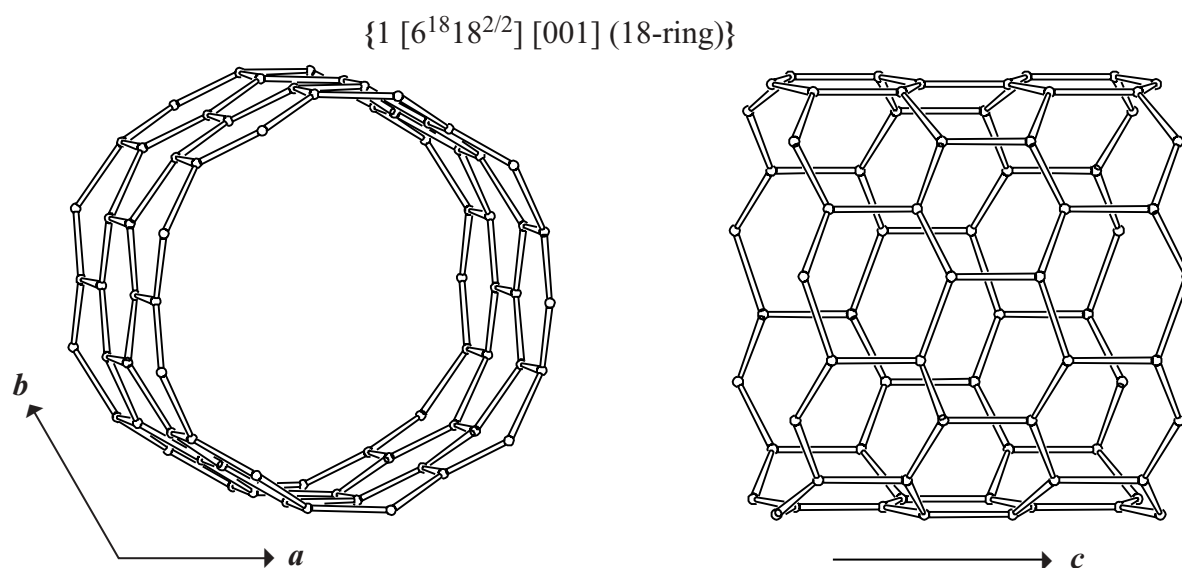


Figure 4. Channel in VFI in perspective view along c (left), and perpendicular to c (right).

5. Supplementary information:

Other framework types containing crankshaft chains

In several framework types at least one of the unit cell dimensions is between 8.4 and 9.9 Å. In many cases this indicates the presence of crankshaft chains.

In the **INTRO** pages links are given to detailed descriptions of these framework types (choose: **Crankshaft 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 3**).