



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:

GOO can be built using a building unit of 8 T atoms (bold in Fig.1) that consists of a double 4-ring (D4R) with two disconnected edges. T8-units, related by a rotation of 180° about c , are connected into chains along c through (deformed) 4-rings. A two-dimensional Periodic Building Unit (PerBU) is obtained when neighboring chains, related by a pure translation along $[110]$, are connected along $[110]$ through 4-rings into the (-110) layer shown in Figure 1.

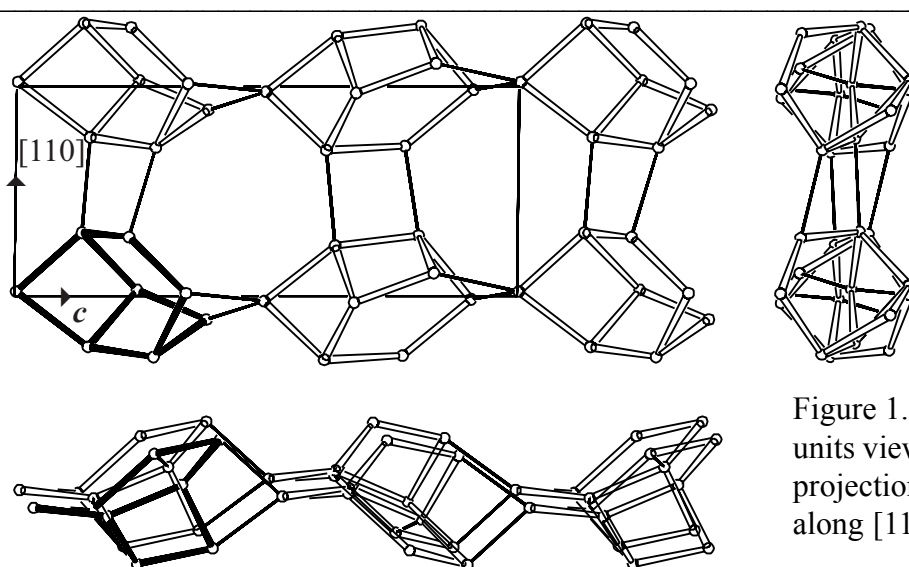


Figure 1. PerBU constructed from T8-units viewed along $[-110]$ (top left), in projection down c (top right), and along $[110]$ (bottom). ▲

2. Connection mode:

Neighboring PerBUs, related by a pure translation along $[-110]$, are connected along $[-110]$ into the (110) layer through 4-rings. The connection mode is equal to that in the (-110) layer (see Fig. 1).

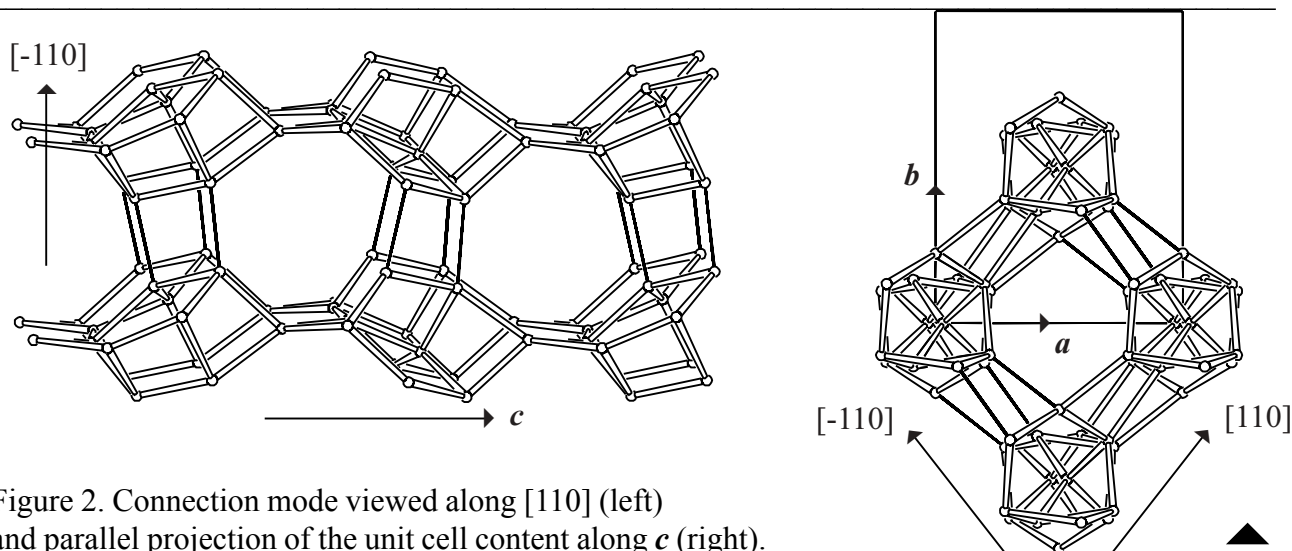


Figure 2. Connection mode viewed along $[110]$ (left) and parallel projection of the unit cell content along c (right). ▲

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



4. Channels and/or cages:

There are intersecting 8-ring channels parallel to $[110]$, $[-110]$ and $[001]$. The channel intersection is depicted in Figure 3. The **pore descriptor** is added. The fusion of channel intersections is illustrated in Figure 4.

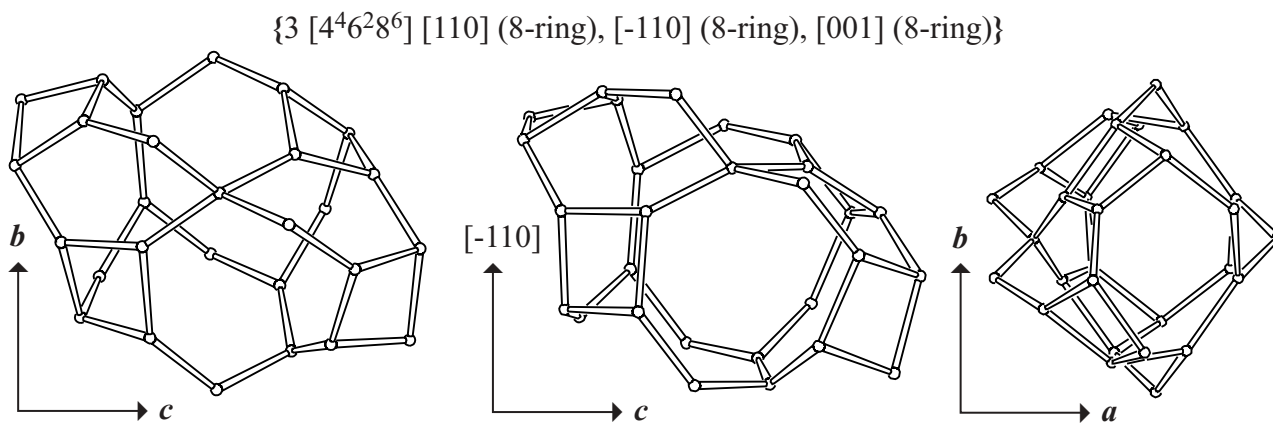


Figure 3. Intersection of channels viewed along $[100]$ (left), along $[110]$ (middle) (the view along $[-110]$ is equivalent) and along c (right);

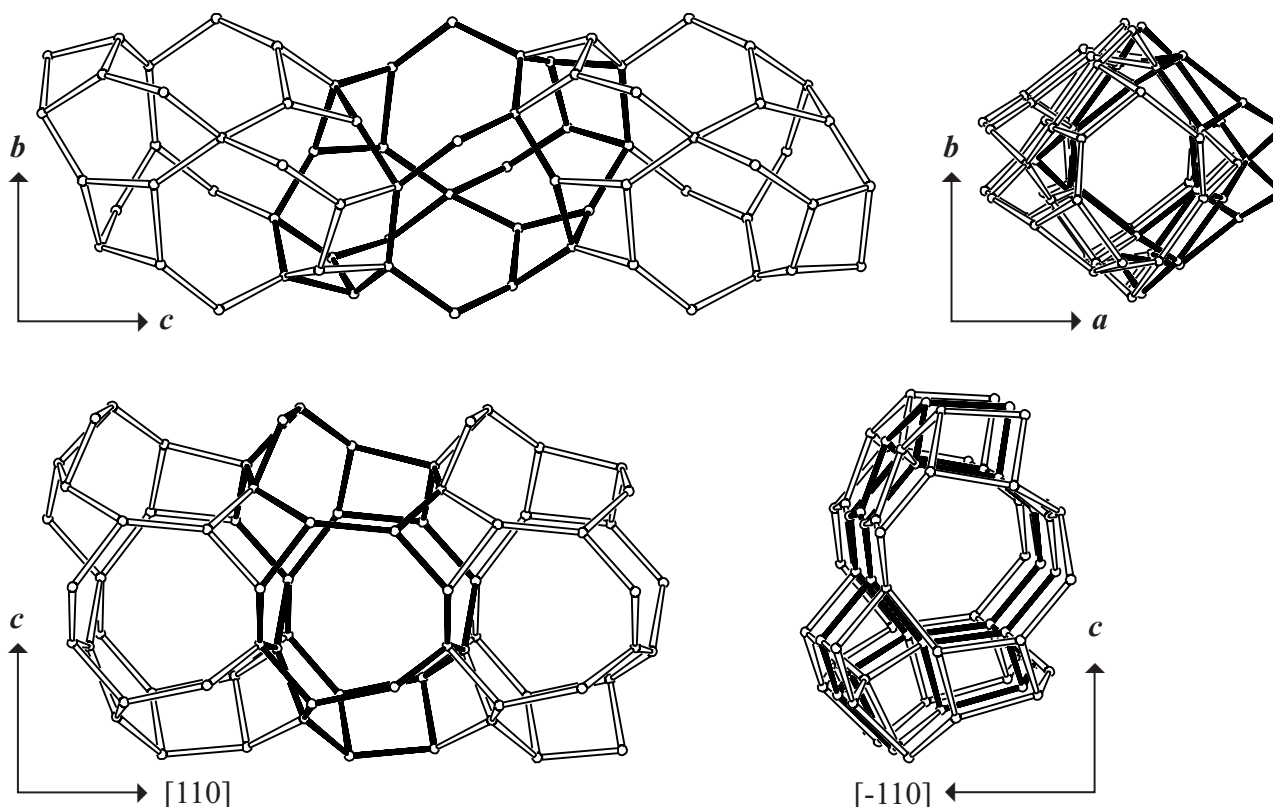


Figure 4. Fusion of channel intersections along c viewed along a (top left), and along c (top right) and fusion of intersections along $[110]$ viewed along $[-110]$ (bottom left), and along $[110]$ (bottom right) [or: fusion of intersections along $[-110]$ viewed along $[110]$ (bottom left), and along $[-110]$ (bottom right)].



5. Supplementary information:

Other framework types containing (modified) double 4-rings (D4Rs)

Double 4-rings (D4Rs) can be connected in several other ways. In some cases the 4-rings of the D4Rs are not 4-fold connected and/or additional T atoms are needed to build the framework.

In the [INTRO](#) pages links are given to a detailed description of a sub-set of framework types that contain (modified) D4Rs (choose: **Double 4-rings**). There is also a link provided to a summary of the PerBUs used in the building schemes of these framework types (choose: **Appendix; Figure 5**).

