

Building scheme for SOS



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

SOS can be built using double 6-rings (D6Rs) with two disconnected edges (or two 4-2 units; bold in Figure 1). The one-dimensional Periodic Building Unit is obtained when D6Rs, related by pure translations along b , are linked into chains along b through 3-rings sharing an edge.

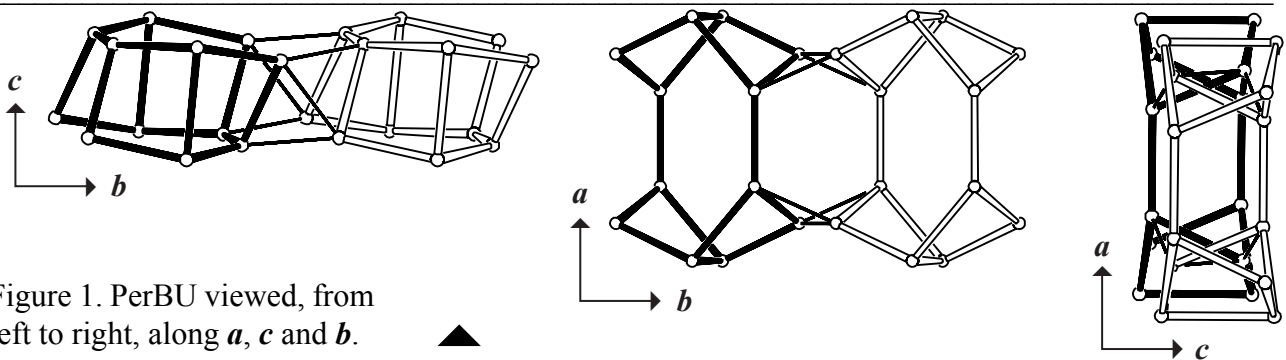


Figure 1. PerBU viewed, from left to right, along a , c and b .

2. Connection mode:

Neighboring PerBUs, related by a rotation of 180° about b and a shift of shift of $\frac{1}{2}b$, are connected as shown in Figure 2. 12-Ring channels parallel to a are formed.

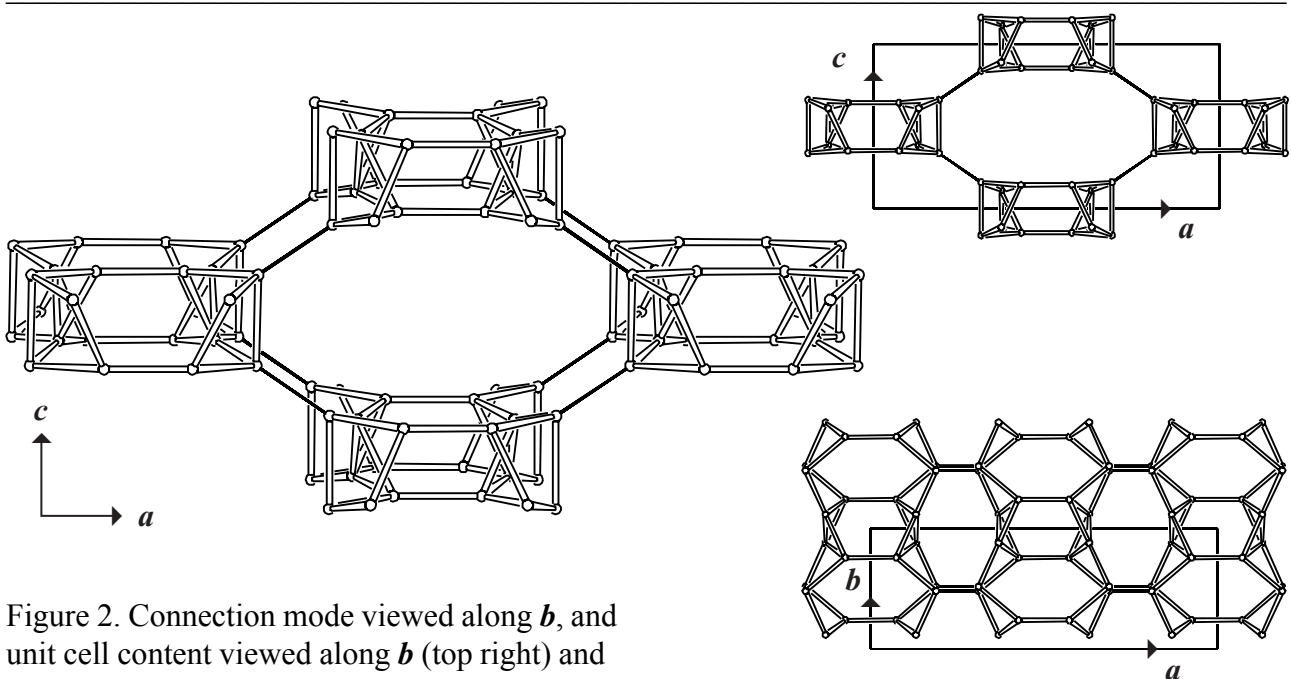


Figure 2. Connection mode viewed along b , and unit cell content viewed along b (top right) and along c (bottom right).

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

4. Channels and/or cages:

12-Ring channels parallel to b and 8-ring channels parallel to $[011]$, $[101]$ and $[10-1]$ intersect. The channel intersection is shown in Figure 3 together with the **pore descriptor**. Four of the six 8-rings in the pore connect the pore to direct neighboring pores along a . The two other 8-rings in the pore are linked to 8-rings in next neighboring pores along c thereby seriously blocking the free entrance of that 8-ring window (Figure 5(b)). Fused pores along b form 12-ring channels along b (Figure 5(a)).

$\{3[3^44^86^612^2] [010] (12\text{-ring}), [001] (8\text{-ring}), [101] (8\text{-ring}), [10-1] (8\text{-ring}), [011] (8\text{-ring})\}$

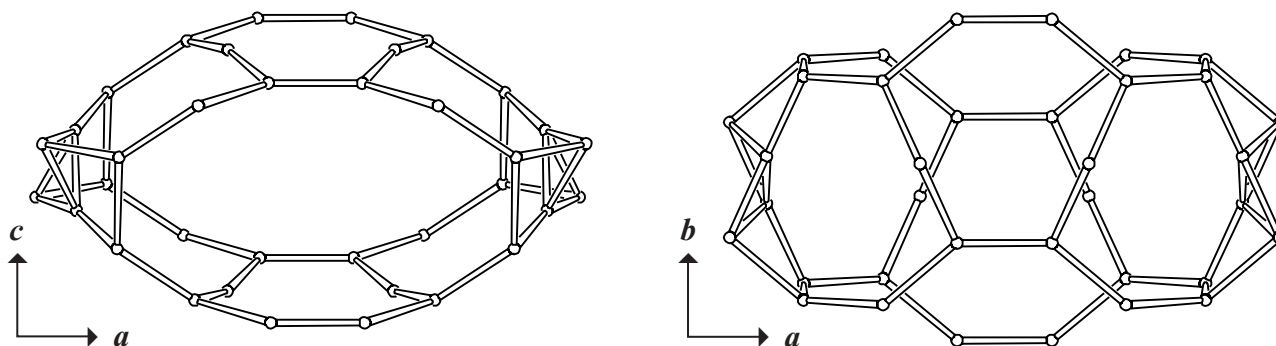
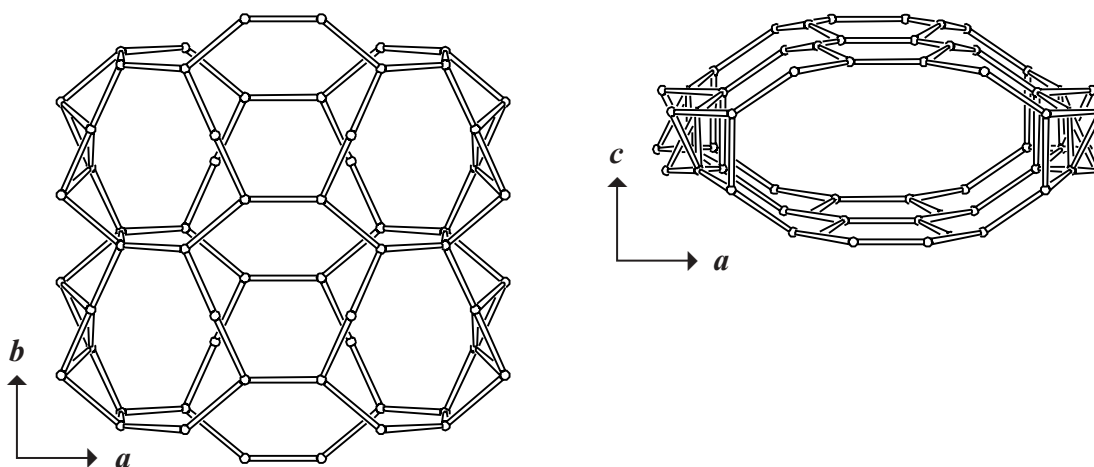


Figure 3. Channel intersection viewed along b (top left), along c (top right) and along a (bottom left).



(a)

Figure 4. (a): Fused channel intersections along b viewed along c (left) and along the 12-ring channel axis parallel to b (right). [Figure 4 is continued on next page]

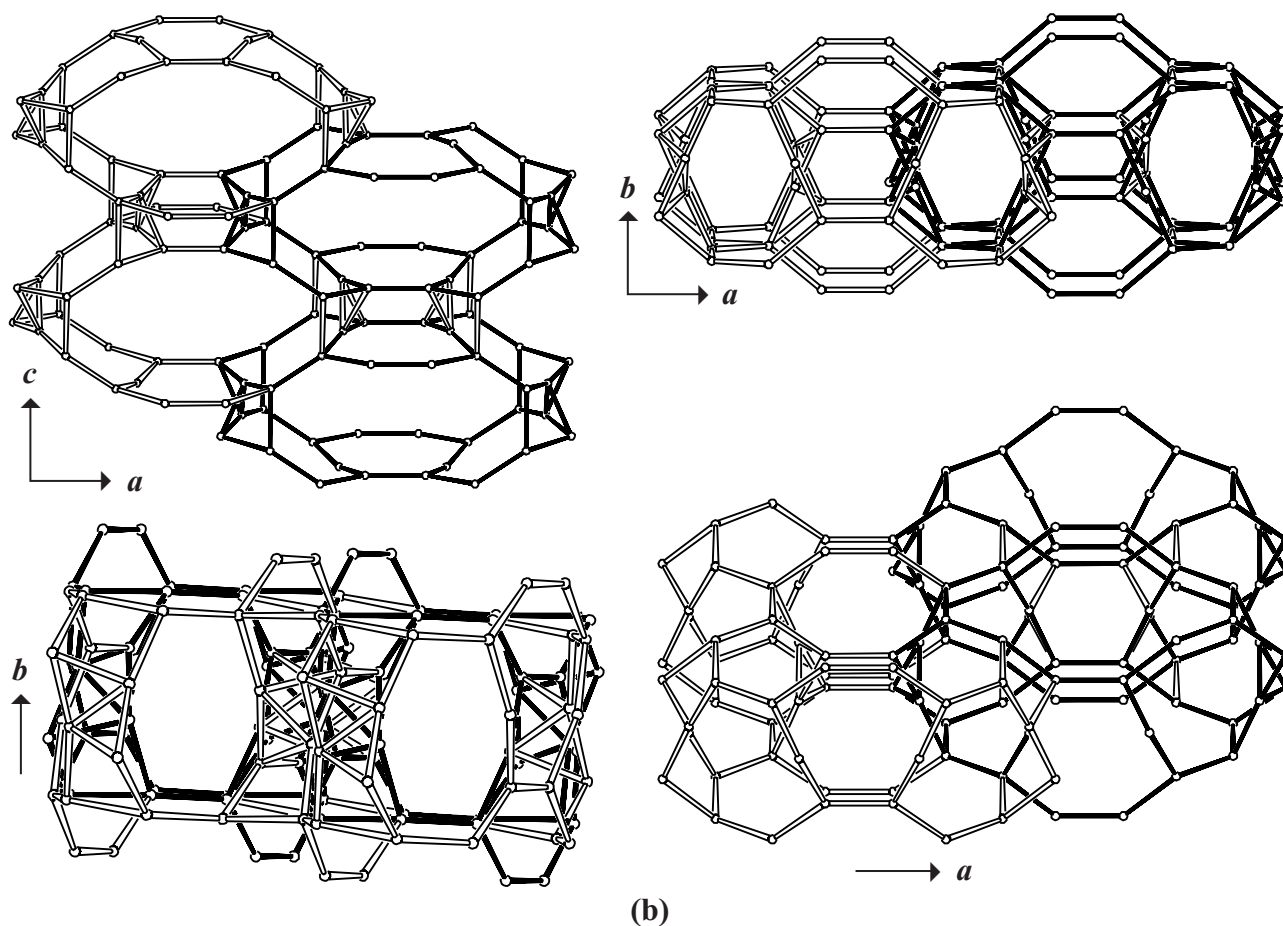


Figure 4 [Cont'd]. (b): Linked channel intersections along a and c viewed along b (top left) and along the 8-ring channel axis parallel to c (top right), along $[10\bar{1}]$ (or $[101]$; bottom left) and along $[011]$ (bottom right).

5. Supplementary information:

Other framework types containing (modified) double 6-rings (D6Rs)

Several other framework types can be built using (modified) D6Rs.

In the **INTRO** pages links are given to descriptions of other framework types containing (modified) D6Rs (choose: **Double 6-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 7**).