Building scheme for MEI

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:

Hexagonal **MEI** can be built using units of 17 T atoms (bold in Figure 1(a)). The T17-unit consists of two double 4-rings in which two T atoms are replaced by a 3-ring (or two 6*1 units connected through a 3-ring). The one-dimensional Periodic Building Unit (PerBU) is obtained when T17-units, related by pure translations along the chain axis, are connected into a chain through single T-T bonds. [Compare this PerBU with those in **AFS** and **BPH**]

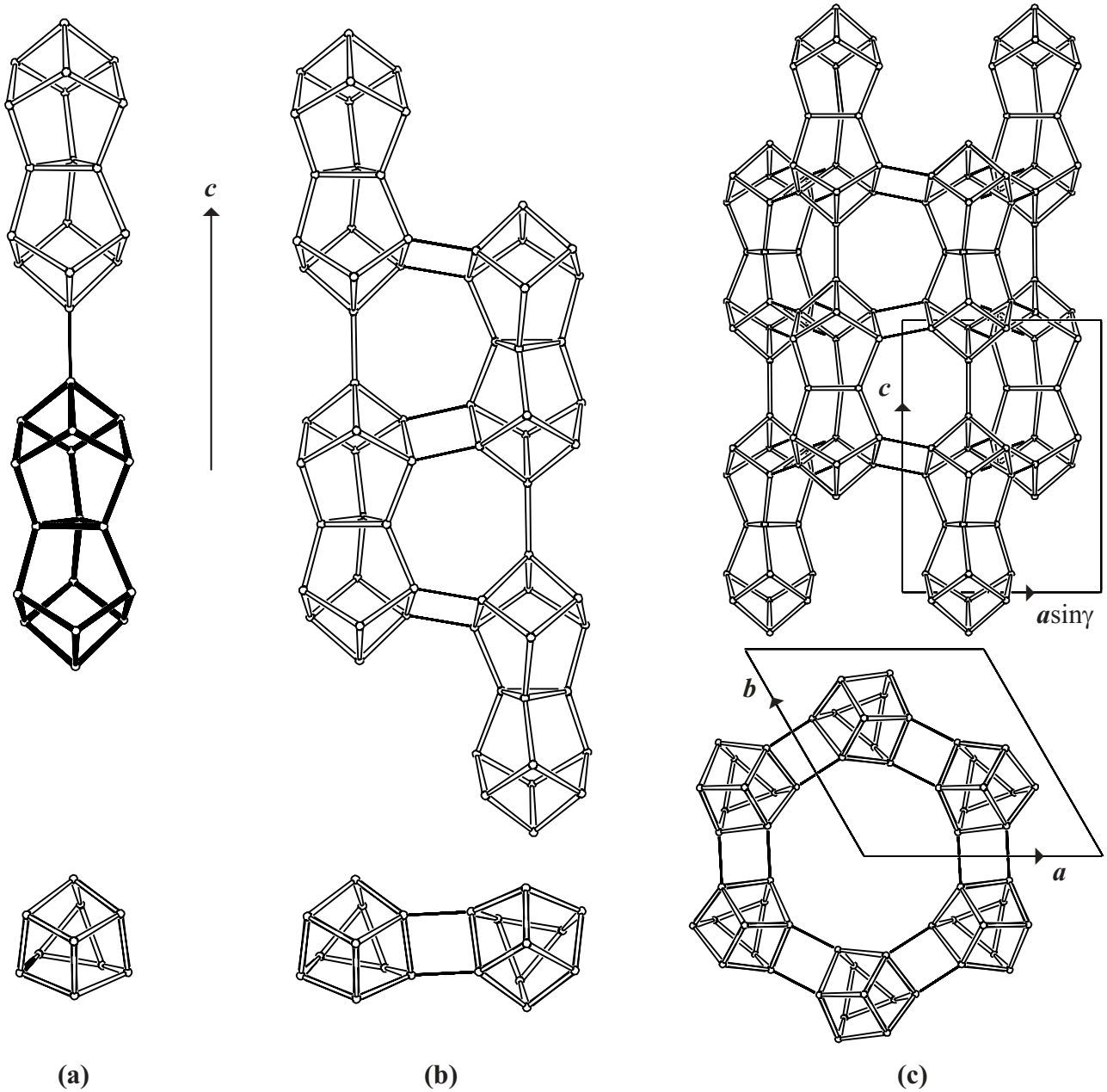


Figure 1. (a): PerBU of T17-units viewed along <010> (top) and along ***c*** (bottom); (b): Connection mode in **MEI** viewed along <010> (top) and along to ***c*** (bottom); (c): Projection of the unit cell content along <010> (top) and along ***c*** (bottom).

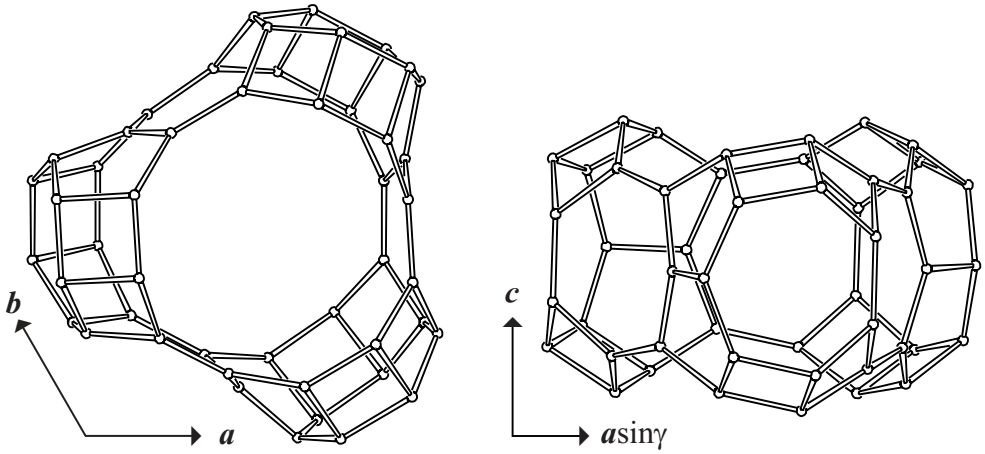
2. Connection mode:

Neighboring PerBUs, related by a rotation of 60º about ***c*** and a shift of ½***c***, are connected in the ***ab*** plane through 4- and 7-rings as illustrated in Figure 1(b).

3. Projections of the unit cell content: See Figure 1(c).

4. Channels and/or cages:

The channel intersection, or cavity, is depicted in Figure 4 together with the **pore descriptor**. Cavities are connected into 7-ring channels along <100> and into 12-ring channels along [001] as illustrated in Figure 5.



{3[$4^{12}5^{6}7^{6}12^{2}$] <100> (7-ring), [001] (12-ring)}

Figure 4. Channel intersection cavity viewed along [001] (left) and <010> (right).

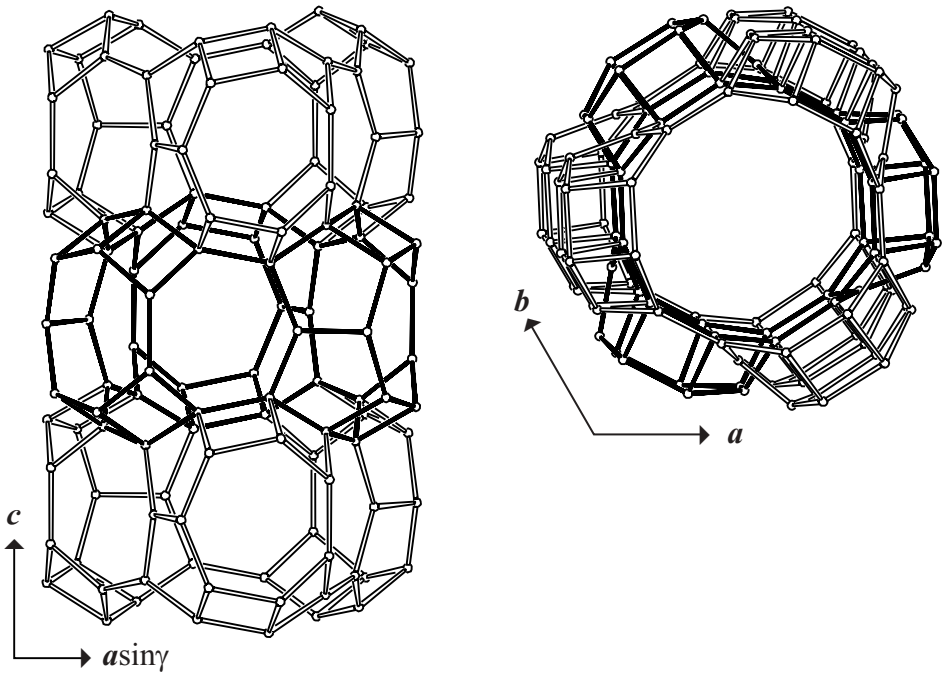


Figure 5. Fusion of the cavities parallel to [001] viewed along <010> (left) and along the 12-ring channel axis parallel to [001] (right). [Figure 5 is continued on next page]

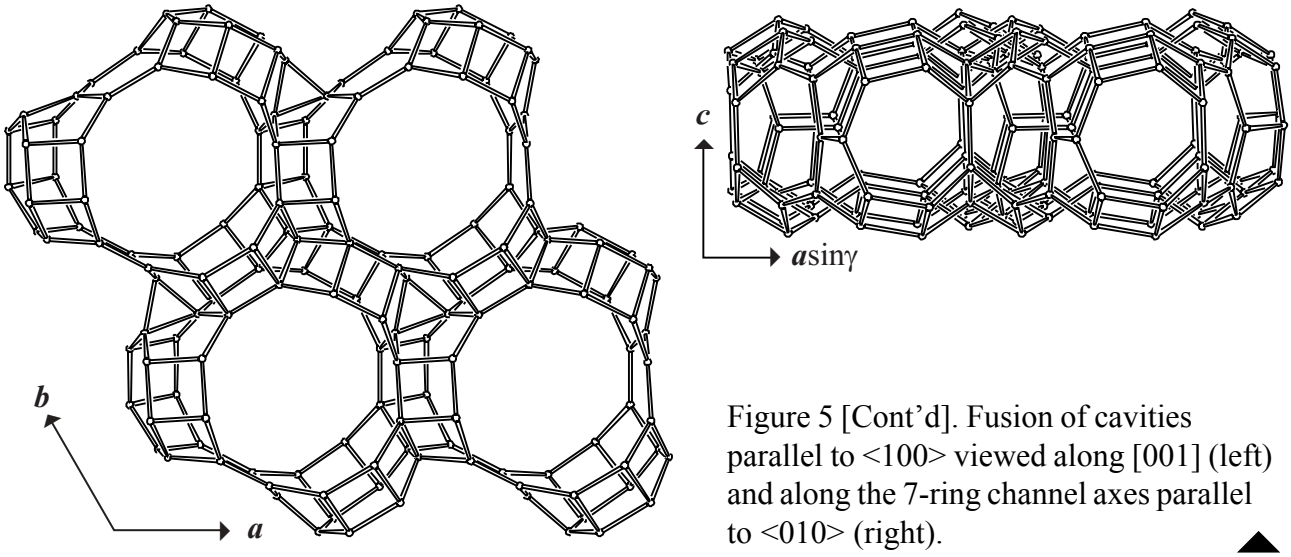


Figure 5 [Cont'd]. Fusion of cavities parallel to <100> viewed along [001] (left) and along the 7-ring channel axes parallel to <010> (right).

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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**).

Other framework types containing (modified) single 3- and/or 4-rings

Single 3- and/or 4-rings can be connected in several other ways. In several cases 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) single 3- and/or 4-rings (choose: **Single 3- and/or 4-rings**). 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 4**).