Building scheme for AWO and UEI

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:

AWO and **UEI** can be built using the crankshaft chain (bold in Fig.1 (left)) or using saw chains (see Figure 3). 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 three crankshaft chains are connected in such a way that a tube with a 6-ring aperture is formed. The tube wall consists of 4-, 6- and 8-rings. The repeat unit of the PerBU consists of a 3-fold (1,2,5)-connected double 6-ring (D6R) and contains 12T atoms (bold in Fig.1 (right)). [The connection in the D6R in **AWO** and **UEI** is different from the connection in the D6R in **AFI**, **ATT** and **ATV**]

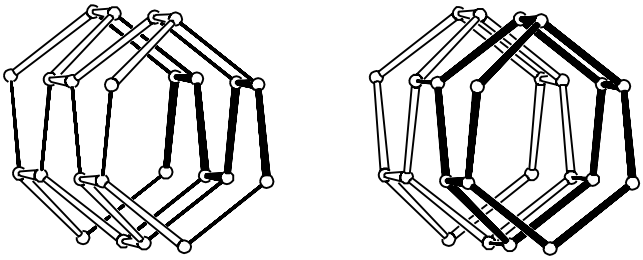

Figure 1. PerBU constructed from crankshaft chains (left) and PerBU constructed from 3-fold connected double 6-rings (see **Alternative description**)

2. Connection mode:

Neighboring PerBUs can be connected along **x** and **y** in two different ways:
(1): neighboring PerBUs are related along **x** by a rotation of 180º about **x** and along **y** by a rotation of 180º about **z**;
(2): neighboring PerBUs are related along **x** as well as along **y** by a rotation of 180º about **x.**

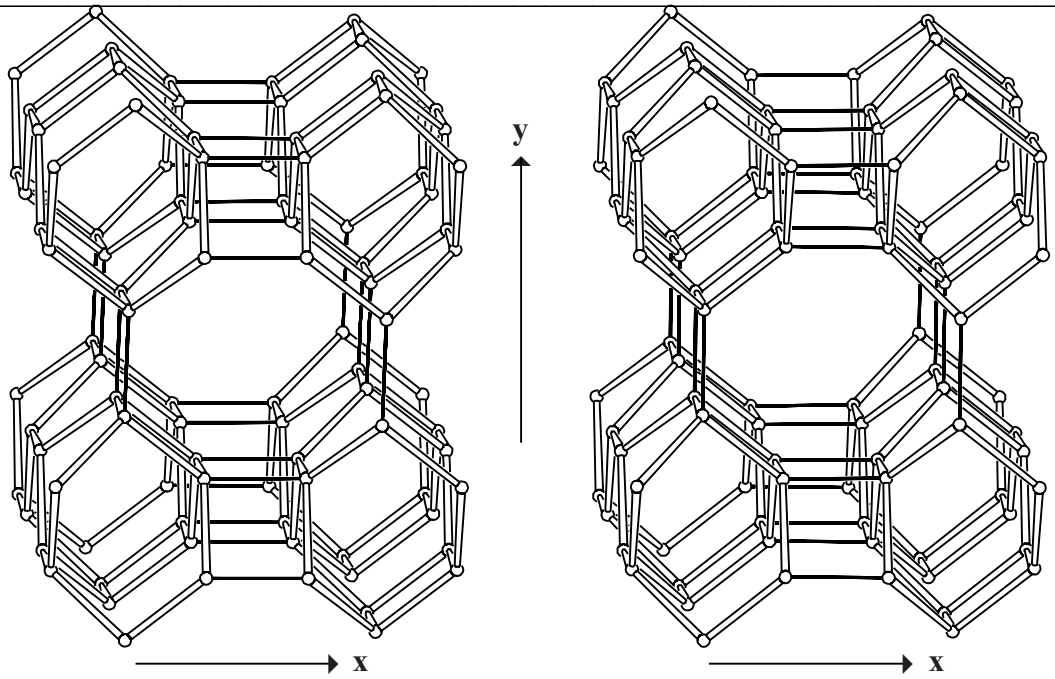

Figure 2. Connection mode **(1)** in **AWO** (left) and connection mode **(2)** in **UEI** (right) seen along **z**.

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

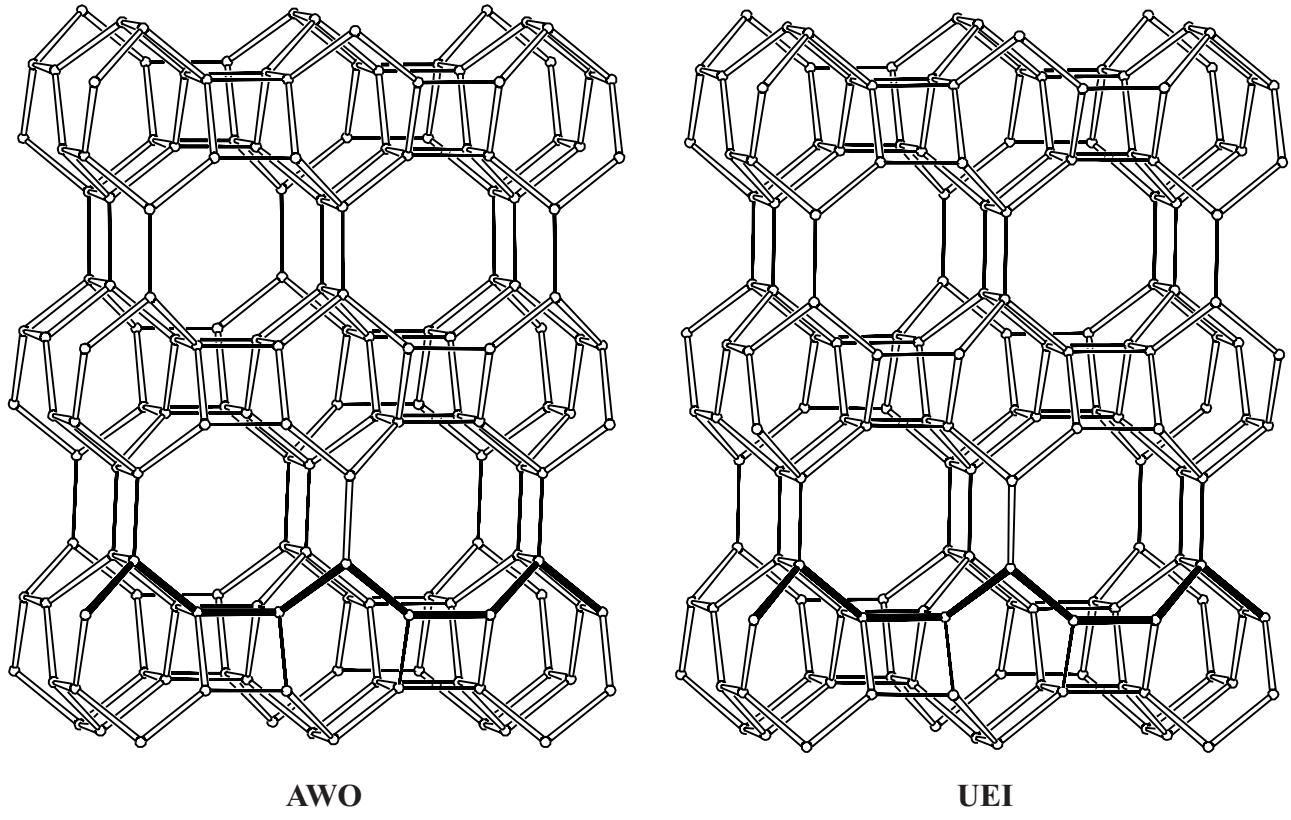

Figure 3. Perspective view of the unit cell content in **AWO** along ***a*** (top left) and in **UEI** along ***b*** (top right) and (equal) parallel projections of the unit cell content along ***a*** in **AWO** and along ***b*** in **UEI** (bottom left) and along ***b*** in **AWO** and along ***c*** in **UEI** (bottom right). In the perspective drawings of both framework types, one saw chain is indicated in bold (see **Alternative description**). [**AWO** and **UEI** can as well be constructed using (twelf) 4-rings or (eight) 4-2 units; see this Figure]

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4. Channels and/or cages:

The large cavities in **AWO** and **UEI** consist of two (fused) double 8-rings (D8Rs) with side-pockets of 4- and 6-rings. The D8Rs are interconnected through an 8-ring as shown in Figure 4 on next page. The **pore descriptor** is added in the Figure. Interconnected one-dimensional channels are parallel to ***a*** (in **AWO**) and to ***b*** (in **UEI**).

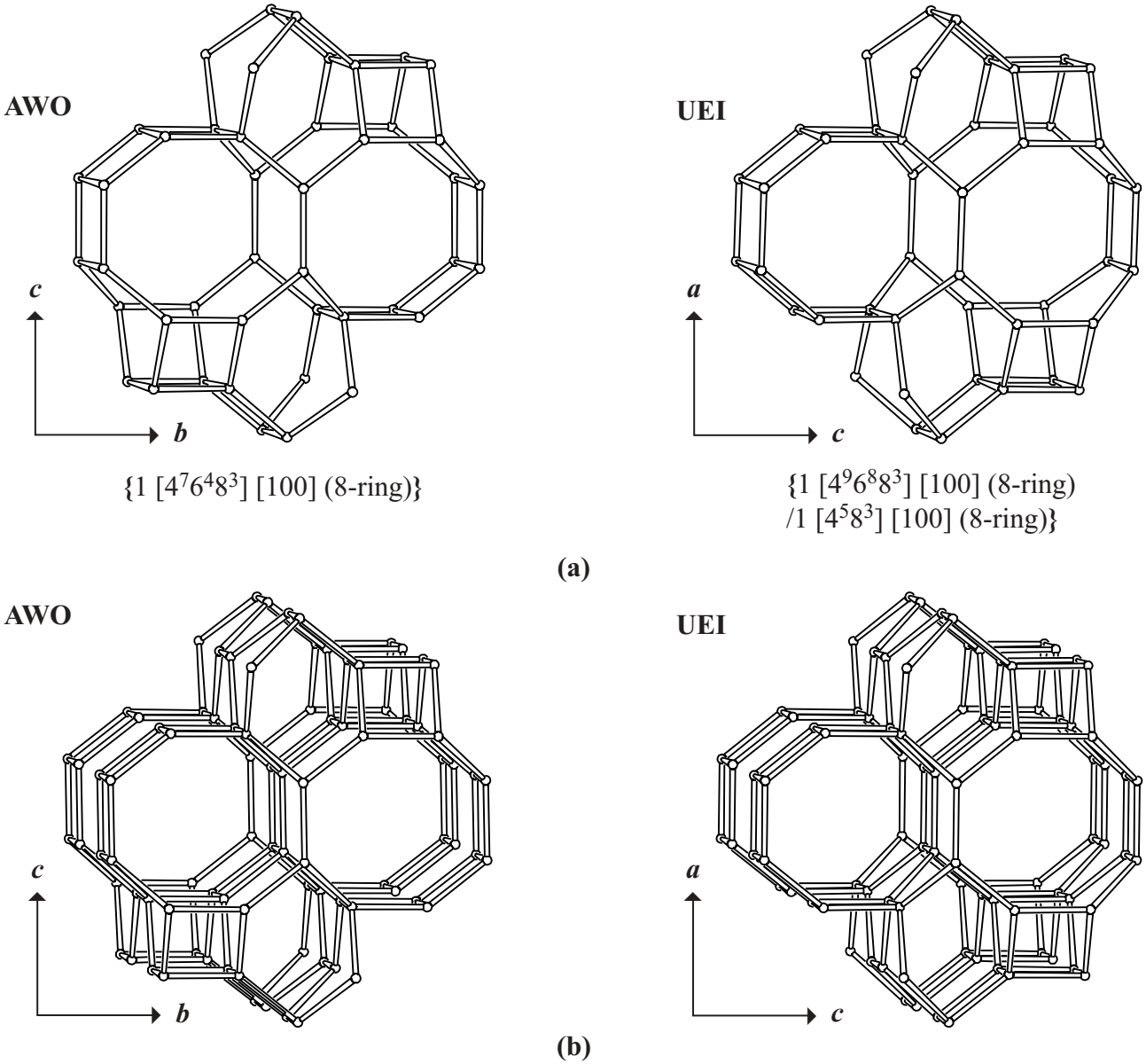

Figure 4. (a): Large cavities in **AWO** seen along ***a*** (left) and in **UEI** along ***b*** (right); (b): Interconnected channels parallel to ***a*** and ***b*** are formed when cavities in **AWO** and **UEI** are linked along ***a*** (left) and along ***b*** (right), respectively.

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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**).

Alternative description of* AWO *and* UEI *using saw chains

In several framework types at least one of the unit cell dimensions is ~ n*7.5 Å (with n = 1,2..etc.). In many cases this indicates the presence of saw chains. **AWO** and **UEI** can be built using (twisted) saw chains that are parallel to ***b*** in **AWO** and to ***c*** in **UEI** (see Figure 3). In both framework types the

unit cell dimension along the saw chain axis is ~ 2*7.5 Å.
In the **INTRO** pages links are given to descriptions of other framework types containing (twisted) saw chains (choose: **Saw 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 2**).

Other framework types containing (modified) double 6-rings (D6Rs)
Several framework types, like **AWO** and **UEI**, can be built using (modified) D6Rs (see Figure 1).
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**).