



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:

CON and IWR can be built using chains parallel to c constructed from units of 14 T atoms (bold in Figure 1) that are related by pure translations along c . The two-dimensional Periodic Building Unit (PerBU) is equal to the bc layer composed of parallel chains, related by a 180° rotation about b (or c), depicted in Figure 2. [Compare this PerBU with those in the [Beta-like framework types](#)]

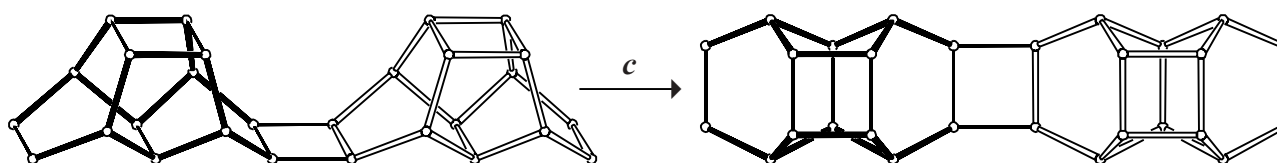


Figure 1. T14-units (one in bold), consisting of two 1-5-1 units (see [Alternative description](#)) and related by pure translations along c , are connected into chains. The chain at the right is rotated over 90° about c with respect to the left one.

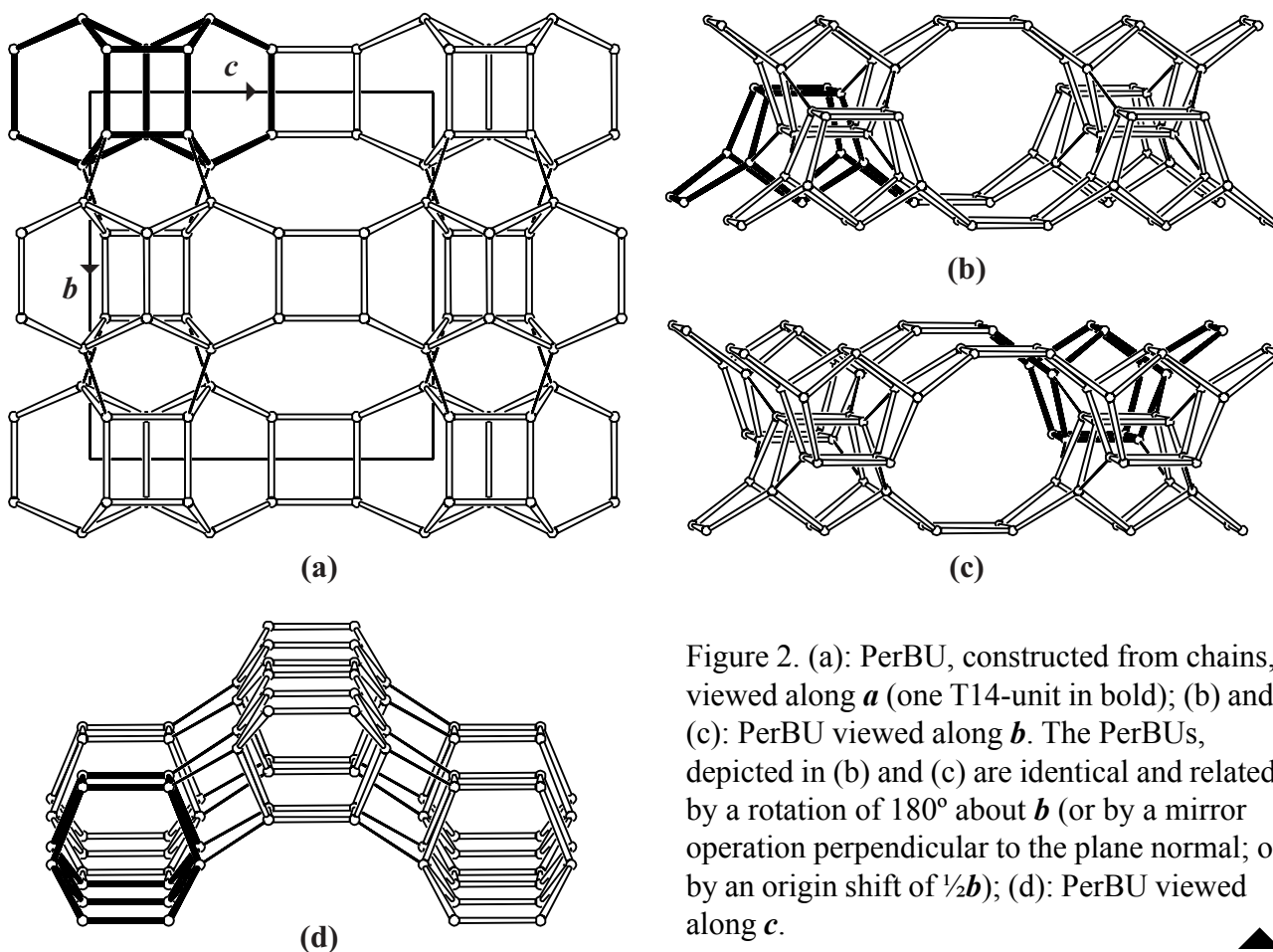


Figure 2. (a): PerBU, constructed from chains, viewed along a (one T14-unit in bold); (b) and (c): PerBU viewed along b . The PerBUs, depicted in (b) and (c) are identical and related by a rotation of 180° about b (or by a mirror operation perpendicular to the plane normal; or by an origin shift of $\frac{1}{2}b$); (d): PerBU viewed along c .



2. Connection mode:

Neighboring PerBUs, related by a mirror operation perpendicular to the plane normal n , can be connected along n through 4-rings in two different ways:

- (1): the lateral shift of neighboring layers along c is zero;
- (2): the lateral shift of neighboring layers along c is $+1/3c$, as illustrated in Figure 3.

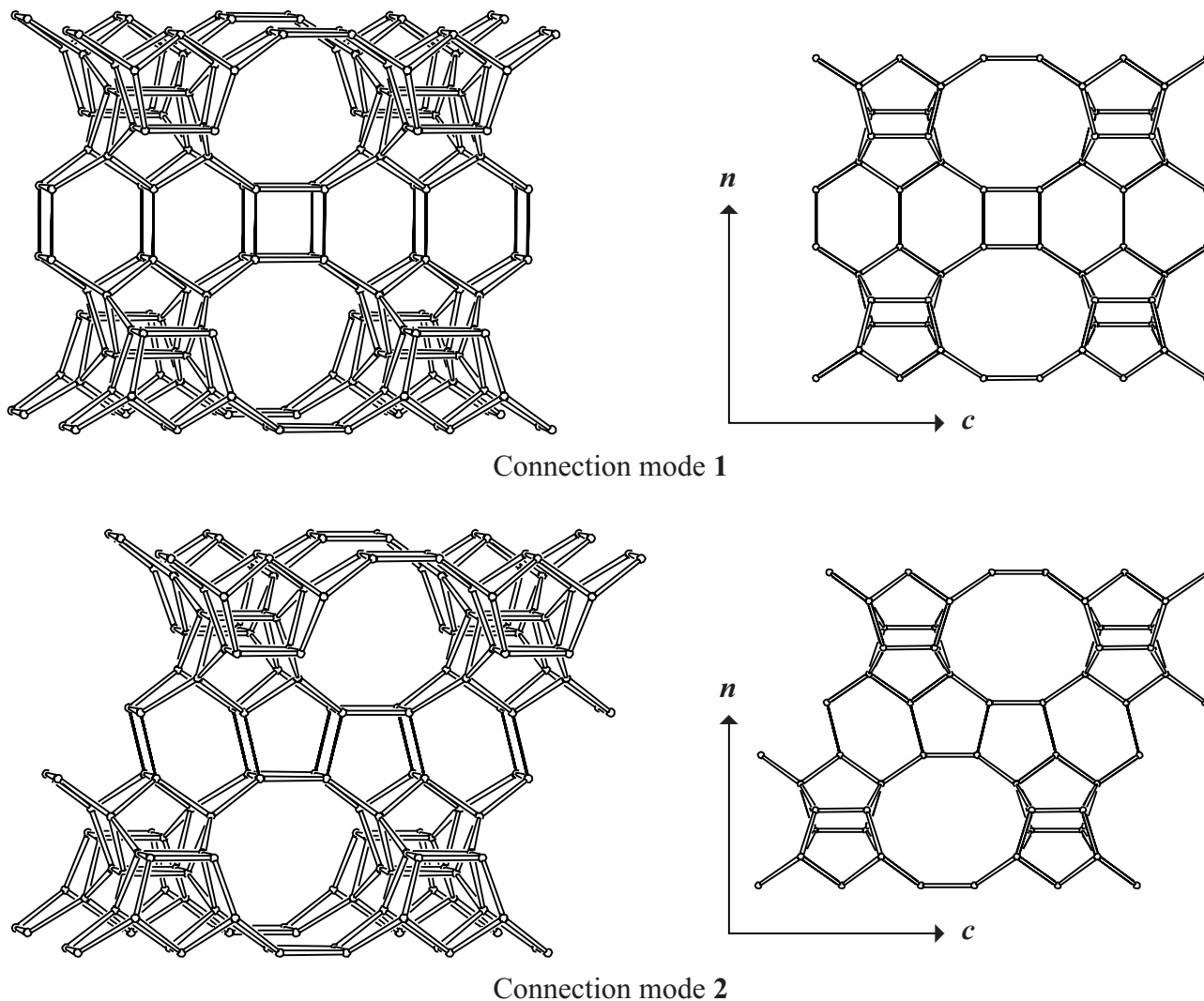


Figure 3: Connection mode (1) in IWR (top) and connection mode (2) in CON (bottom) viewed along b . Fused 4-6-6 ring sequences and fused 5-5-6 ring sequences are formed in connection mode (1) and (2), respectively. The parallel projections are shown at the right. [Compare these connection modes with the ones in *BEA and BEC] ▲

3. Projections of the unit cell content:

Pure IWR and CON are obtained when neighboring PerBUs, related by a mirror operation perpendicular to the plane normal n , are connected along n by applying a lateral shift along c of zero or $1/3c$, respectively, as shown in Figure 4 on next page. There is no difference in the projection of the structure of IWR and CON along c .

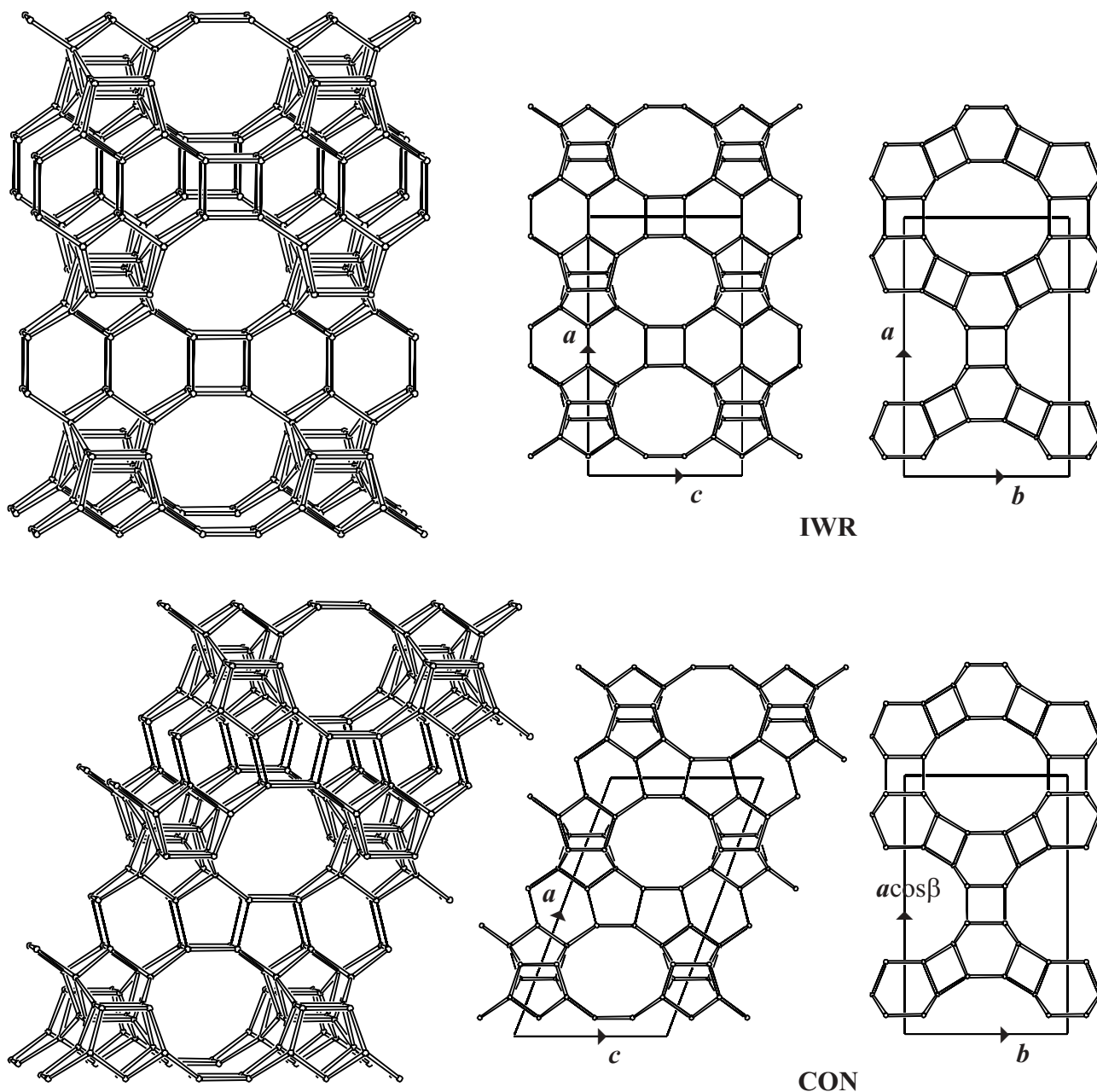


Figure 4: Cell content of **IWR** (top) and **CON** (bottom) viewed in perspective along **b** (left) and in projection along **b** (middle) and along **c** (right). The projection along **c** is the same for both framework types. ▲

4. Channels and/or cages:

10-Ring channels are parallel to **b** and 12-ring channels are parallel to **c**. The channels are depicted in Figure 4 on next page together with their **pore descriptor**. The 12-ring channels in **CON** and **IWR** parallel to **c** are topologically equivalent to those in ***BEA** and **BEC**, respectively [Compare the present Figure 5(a) with Figure 4 in ***BEA** and **BEC**]. The 10-ring channels parallel to **b** are equivalent in **CON** and **IWR**. The fusion of channels is illustrated in Figure 6. Diffusion along the 12-ring channel parallel to **a** is obstructed as can be seen from the drawings of the (fused) channels at the bottom of Figure 5 and Figure 6 on next pages.

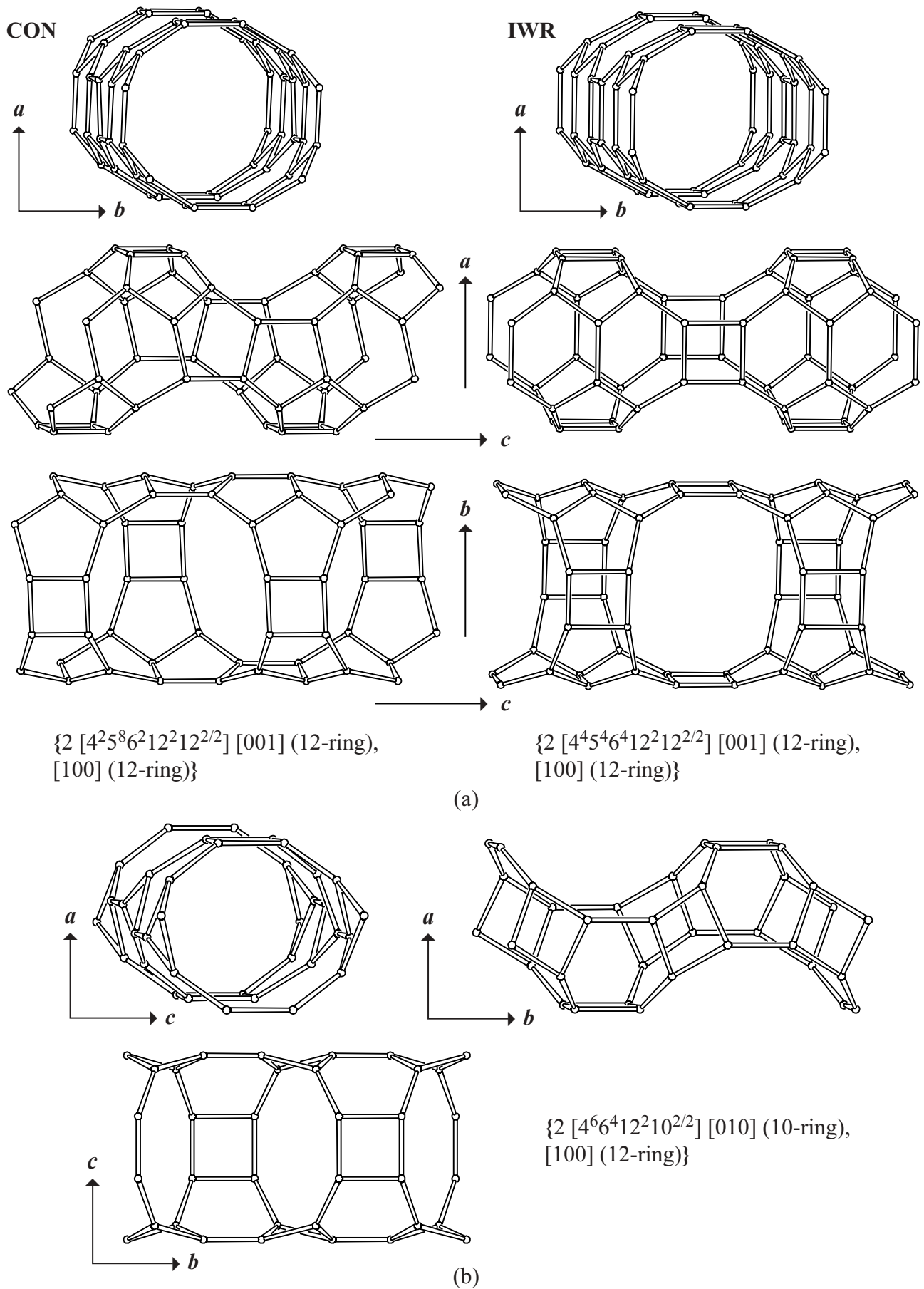


Figure 5. (a): 12-Ring channel in **CON** (left) and **IWR** (right) viewed along *c* (top), *b* (middle) and *a* (bottom); (b): 10-Ring channel in both framework types viewed along *b* (top left), *c* (top right) and along *a* (bottom). [Figure 6 is on next page]

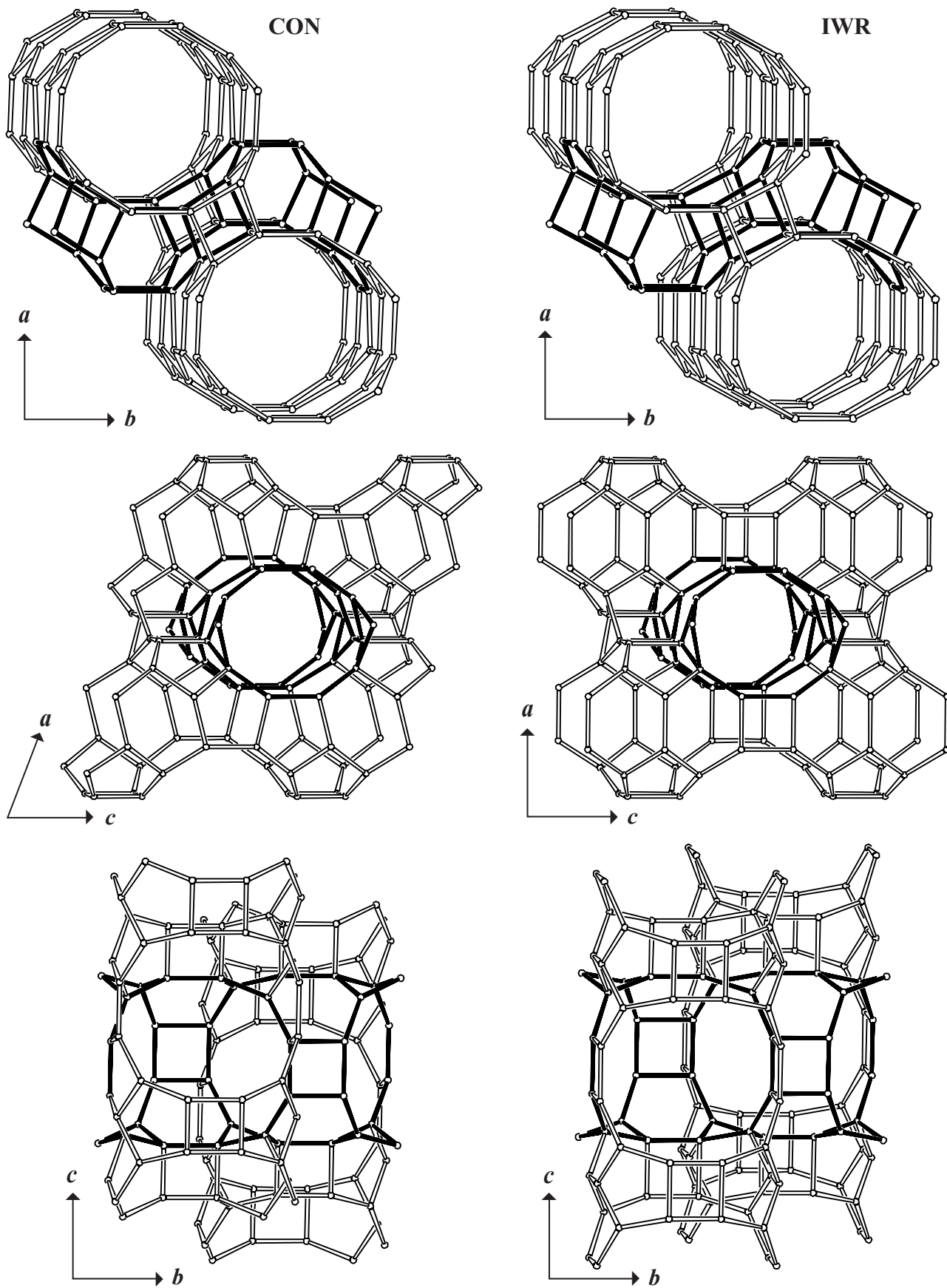


Figure 6. Fusion of channels in **CON** (left) and in **IWR** (right) viewed along c (top), along b (middle) and along a (bottom).



5. Supplementary information:

Beta-like framework types

Beta-like framework types can be constructed using two types of chains.

In the **INTRO** pages links are given to a description of the framework types that contain these chains (choose: **Beta-family**). There is also a link provided to a summary of the chains and PerBUs used in the building schemes of the framework types (choose: **Appendix; Figure 9**).

Alternative description using (modified) 5-rings

Several framework types, like **CON** and **IWR**, can be constructed using (modified) 5-rings.

In the **INTRO** pages links are given to detailed descriptions of these framework types (choose: **5-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 6**).

