Building scheme for IWW

1. Periodic Building Unit:

IWW can be built using chains parallel to *c* constructed from T28-units (one in bold in Figure 1).
The T28-units are related by pure translations along *c*. The chain resembles a "double" chain in **CON**
with one 4-ring in a different orientation. The two-dimensional Periodic Building Unit (PerBU) is
equal to the *bc* layer depicted in Figure 2. The PerBU is built from parallel chains related by pure
translations along *b*. [Compare this chain and PerBU with those in the **Beta-like framework types**]
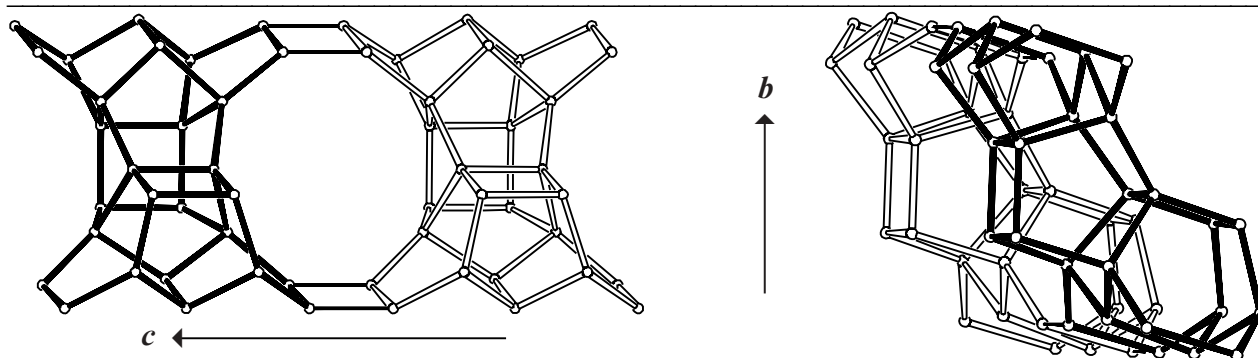

Figure 1. Chain of T28-units (one T28-unit in bold) viewed perpendiculer to the chain axis (left) and
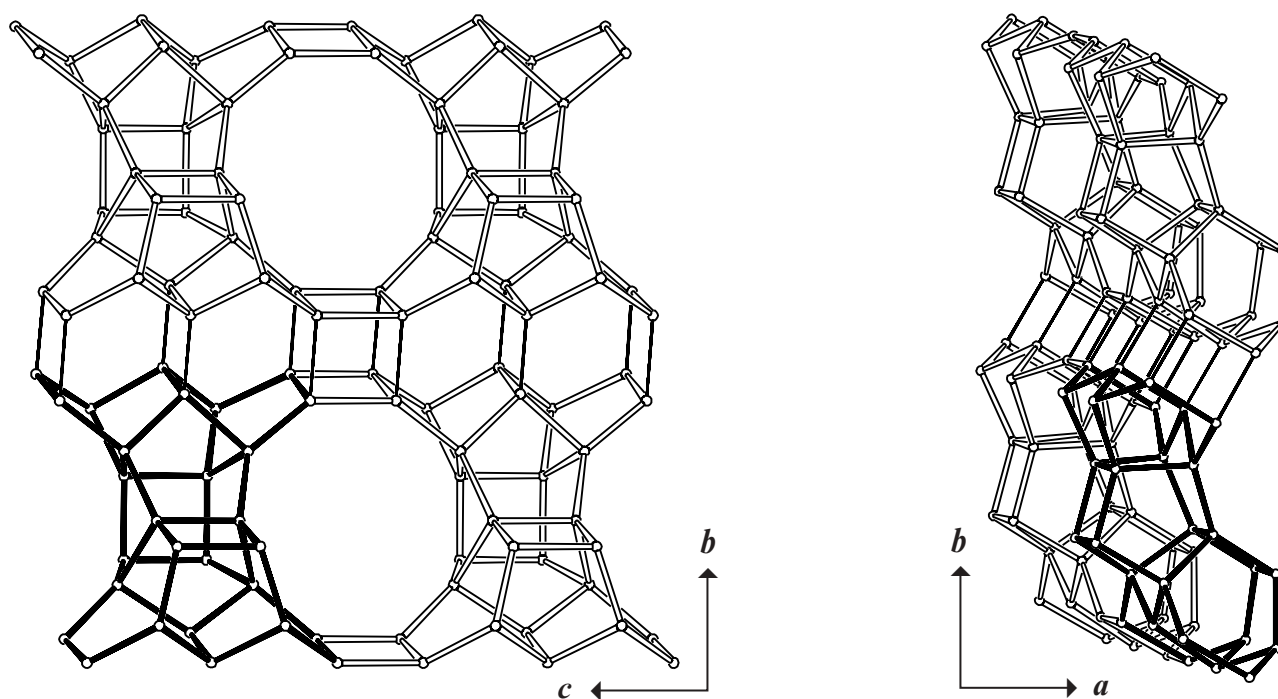along the chain axis (right).

Figure 2. PerBU in **IWW** viewed along *a* (left) and along *c* (right). The connecting T-T bonds in the
fused 4-6-6 ring sequences formed are drawn as single lines.

2. Connection mode:

Neighboring PerBUs are alternately related by a rotation of 180º about *c* (and a shift of 1/2*b*) and by a rotation of 180º about *b* (and a shift of 1/2*b*) as illustrated in Figure 3. 8- And 12-rings are formed.
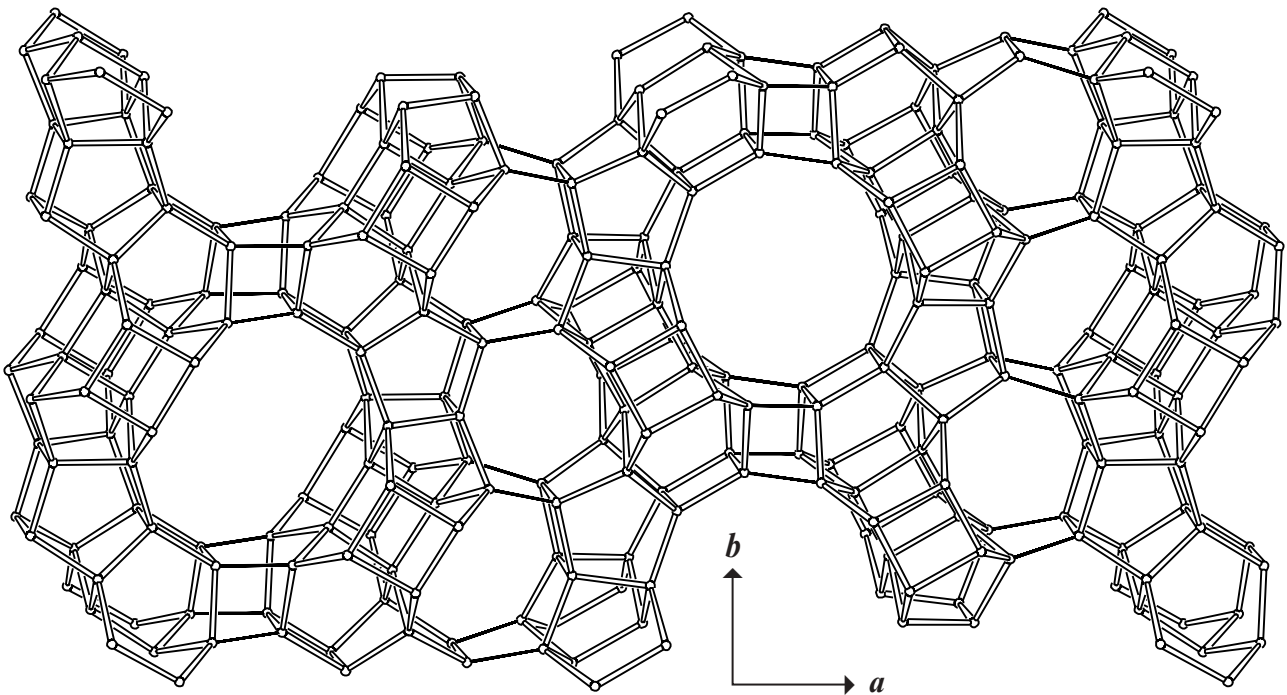

Figure 3. Connection mode viewed along *c*. Only one T28-unit along *c* has been drawn for clarity. ▲
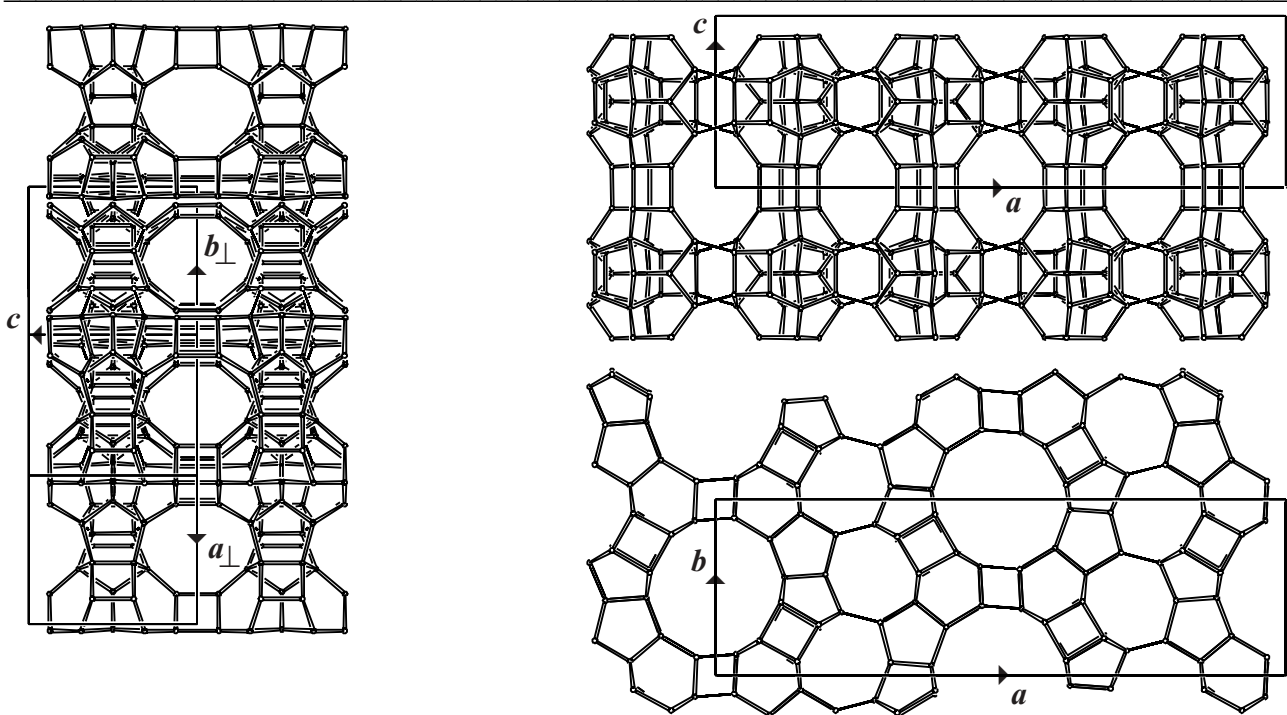
3. Projections of the unit cell content: See Figure 4.

Figure 4. Unit cell content in **IWW** viewed along [120] (left), along *b* (top right) and along *c* (bottom right). ▲

4. Channels and/or cages:

Interconnected 8- and 12-ring channels are parallel to *c* and (sinusoidal) 10-ring channels are parallel to *b* and <120>. The two types of channel intersections (or cavities) are depicted in Figure 5. The **pore descriptor** is added. The linkage of cavities along *a*, *b* and *c* is illustrated in Figure 6.

Pore descriptor cavity 1:
$\{2 \, [4^2 5^4 6^1 8^2 10^3] \, [001] \, (8\text{-ring}), <120>(10\text{-ring})\}$

Pore descriptor cavity 2:
$\{2 \, [4^4 6^6 10^4 12^2] \, <120> \, (10\text{-ring}), [001] \, (12\text{-ring})\}$
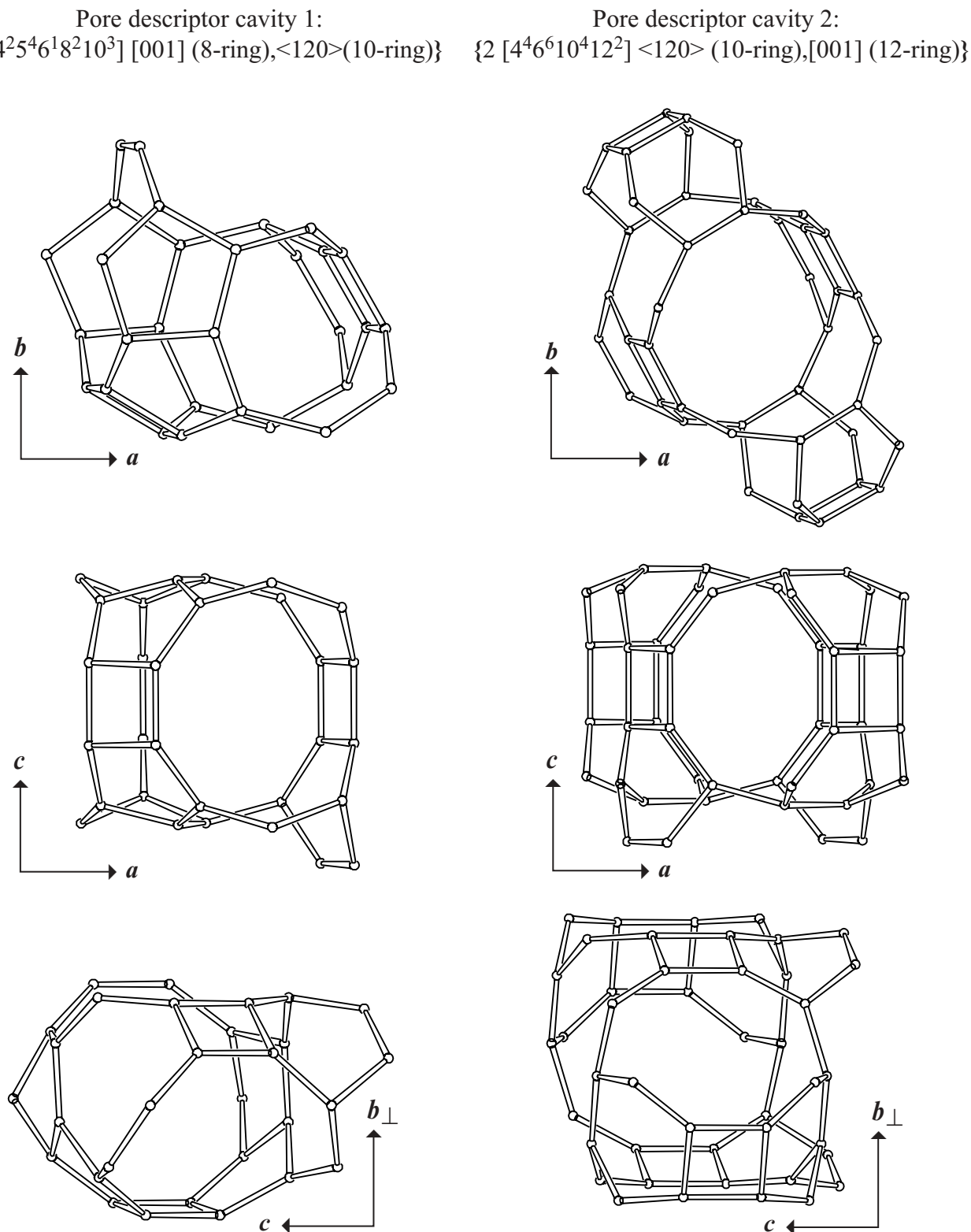

Figure 5. The two types of cavities viewed along (from top to bottom) *c*, *b* and [1-20].
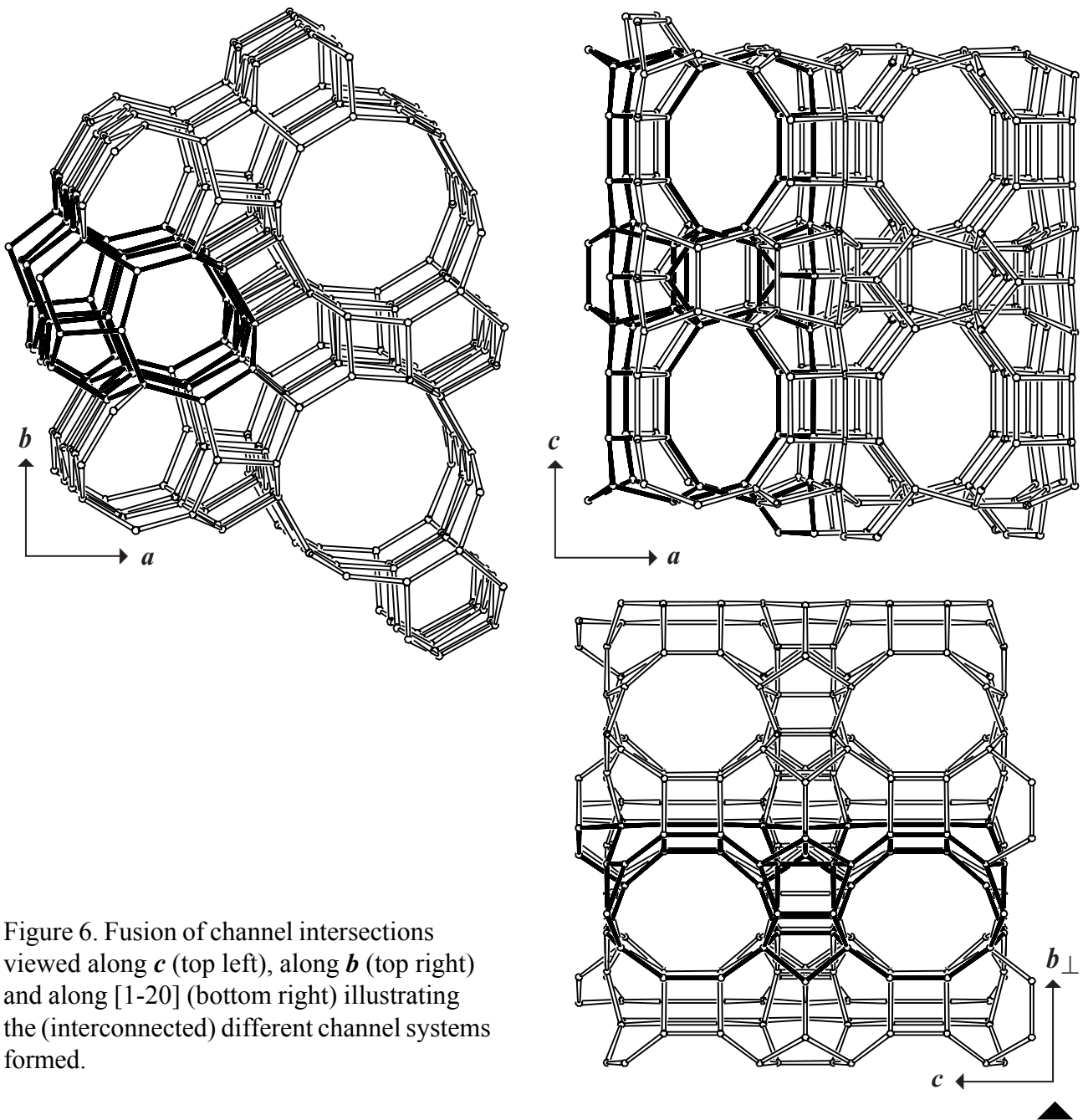[Figure 6 is on next page]

Figure 6. Fusion of channel intersections viewed along *c* (top left), along *b* (top right) and along [1-20] (bottom right) illustrating the (interconnected) different channel systems formed.

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5. Supplementary information:

Beta-like framework types
Beta-like framework types can be constructed using chains that resemble the chain in the **BEA** framework type.
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**).