Building scheme for EPI ◀◀

1. Periodic Building Unit:

Finite building units of 12 T atoms are composed of two 5-1 units (bold in Figure 1(a)). The two-dimensional Periodic Building Unit (PerBU) is obtained when these T12-units, related by pure translations along **a** and **c**, are connected into a layer with a oblique repeat unit (Figure 1(b)). Infinite zigzag chains along **c** (repeat distance: 2x5.2 Å) and infinite (twisted) saw chains along **bxc** (repeat distance: $a\sin\beta$=7.5 Å) are formed. A sheet of (fused) 6-ring boats with dimer "handles" is generated as shown in Figure 1(c). [Compare this PerBU with the PerBUs in **DAC** and **MOR**]
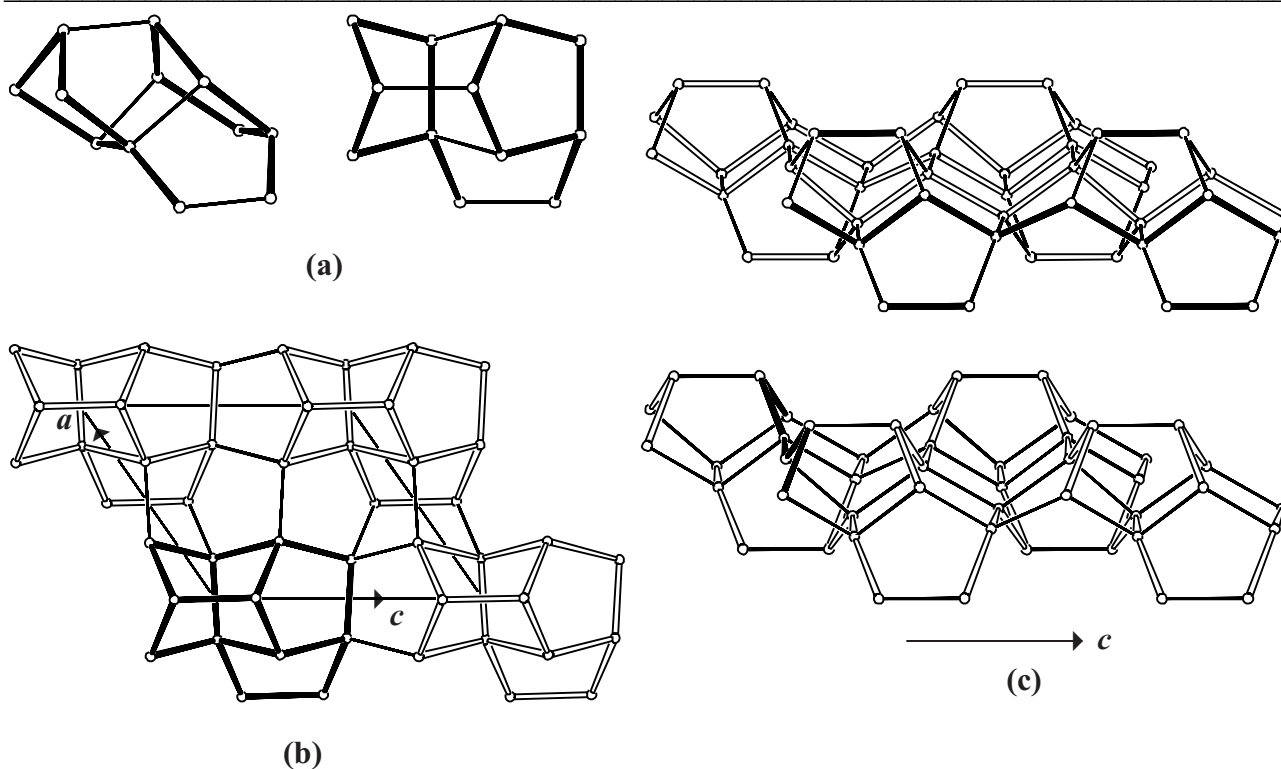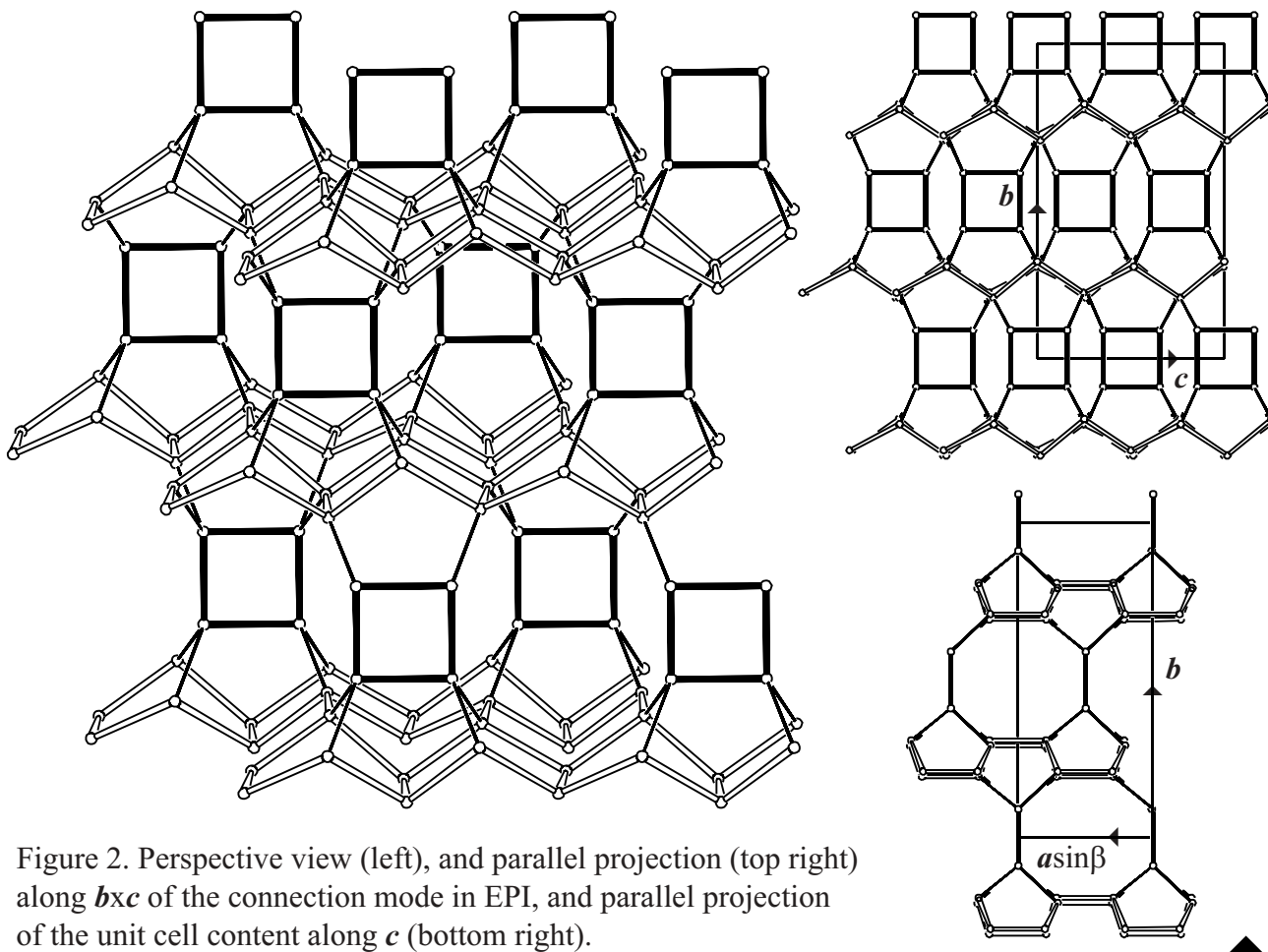

Figure 1. (a): T12-unit composed of two 5-1 units (see **Alternative description**) viewed along **bxc** (left), and along **b** (right); (b): parallel projection of the PerBU along **b** (one T12-unit in bold). (c): Perspective view along **bxc** of the PerBU (a 6-ring sheet with dimer "handles"): PerBU built from zigzag chains (top; one zigzag chain and two dimers in bold) and from saw chains (bottom; one twisted saw chain in bold). [See **Supplementary information**]

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2. Connection mode:

Neighboring PerBUs, related by a lateral shift of ½**a**, are connected along **b** as shown in Figure 2 on next page. Sheets of (fused) 6-ring boats are connected through 4-rings.

Figure 2. Perspective view (left), and parallel projection (top right) along **b**x**c** of the connection mode in EPI, and parallel projection of the unit cell content along **c** (bottom right).

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

4. Channels and/or cages:

There are 10-ring channels parallel to **a**, **(a+c)** and **b**x**c** which interconnect with one-dimensional straight 8-ring channels parallel to **c**. The intersection of channels is illustrated by the "double" cavity shown in Figure 3. The limiting window in the 10-ring channels parallel to **a**, and **(a+c)** is an 8-ring window. The pores of the straight 10-ring channel parallel to **b**x**c** are blocked by 4-rings (Figure 4).

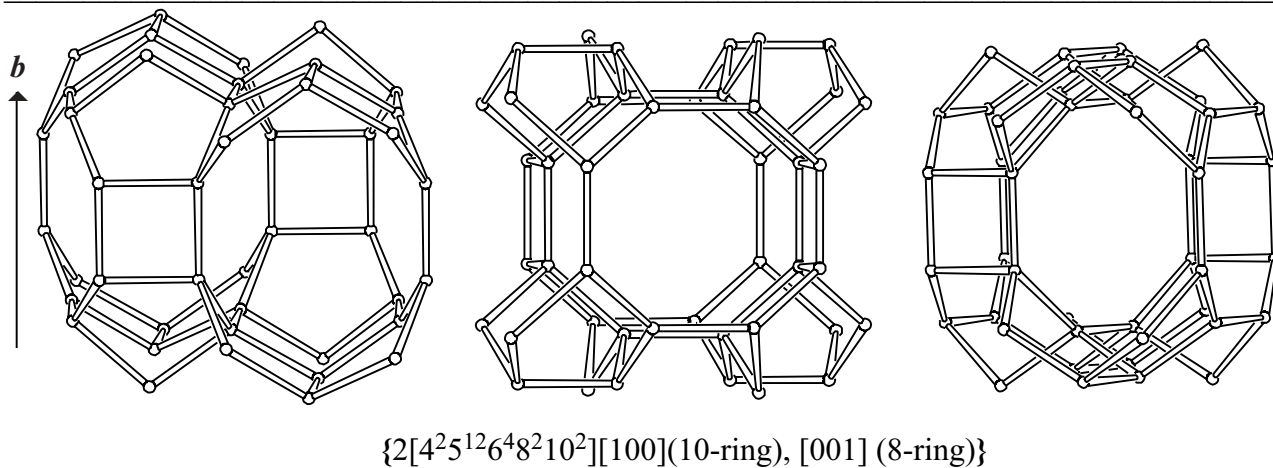$\{2[4^2 5^{12} 6^4 8^2 10^2][100](10\text{-ring}), [001] (8\text{-ring})\}$

Figure 3. (a): Channel intersection in perspective view along **b**x**c** (left), along **c** (middle), and along **a** (right). The **pore descriptor** is added. [Figure 4 is on next page]
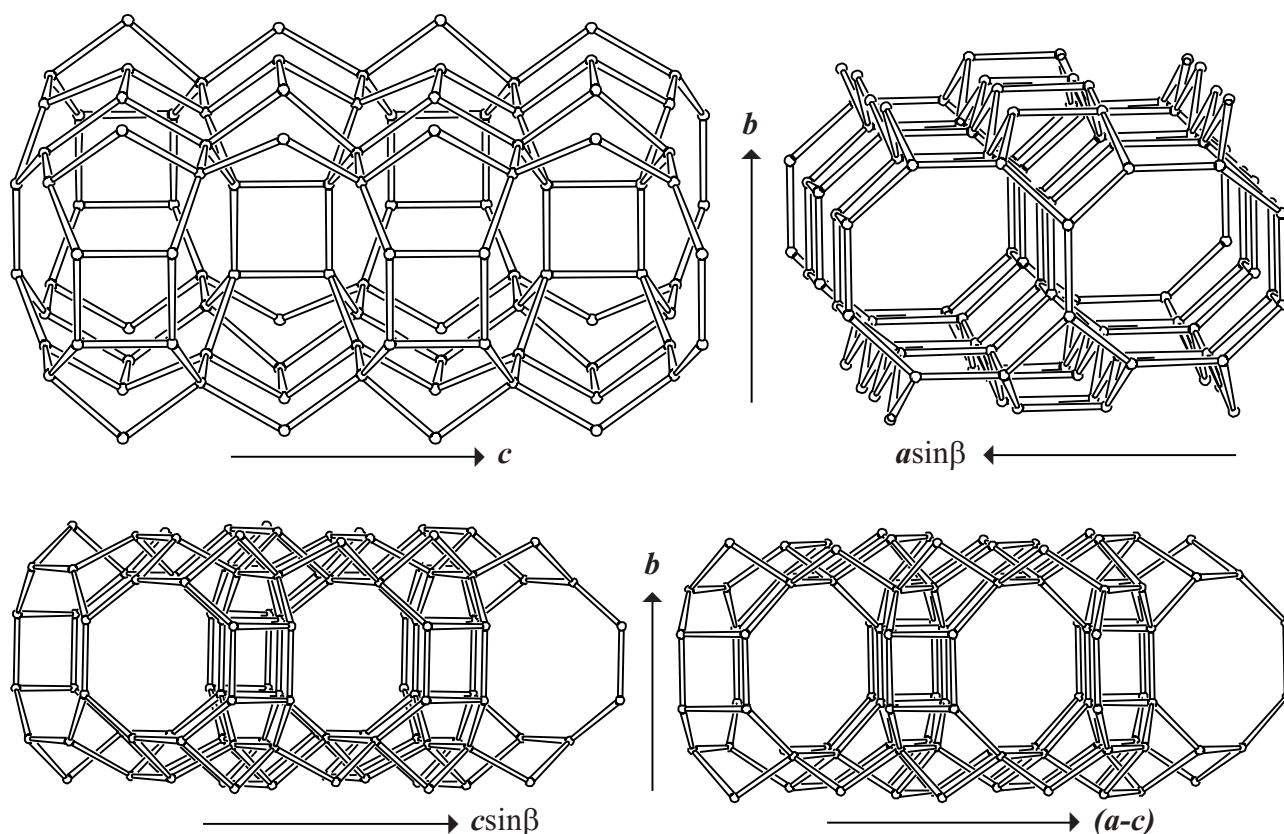
Figure 4 Fusion of channel intersections. Straight 8-ring channels parallel to *c* (seen along *b*x*c* (top left), and along *c* (top right)), and 10-ring channels parallel to *a* (seen along *a* (bottom left), and *(a+c)* (bottom right)), are generated. The limiting window in the 10-ring channels is an 8-ring window. The 10-ring channels parallel to *b*x*c* is blocked by 4-rings (top left).

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5. Supplementary information:

Other framework types containing zigzag chains
In several framework types at least one of the unit cell dimensions is about n*5.2 Å (where n = 1, 2, 3... etc.). In many cases this indicates the presence of zigzag chains.
In the **INTRO** pages links are given to detailed descriptions of these framework types (choose: **Zigzag chains**). 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 1**).

Other framework types containing saw chains
In several framework types at least one of the unit cell dimensions is about n*7.5 Å (where n = 1, 2, 3... etc.). In many cases this indicates the presence of saw chains.
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**).

Alternative description using (modified) 5-rings
Several framework types, like **EPI**, 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**).