Building scheme for LTF

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1. Periodic Building Unit

Hexagonal **LTF** can be built using the saw chain (bold in Figure 1) running parallel to ***c***. The repeat distance along the saw chain is about 7.5 Å. The repeat unit in the chain consists of 3 T atoms. Six saw chains are connected into a one-dimensional PerBU consisting of a column of ***gme*** cavities that are connected through common 6-rings (Figure 1).

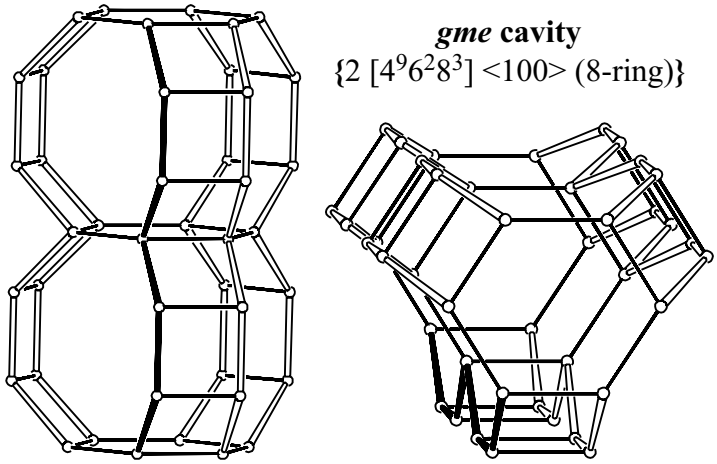

Fig. 1. PerBU composed of (fused) ***gme*** cavities viewed perpendicular to ***c*** (left) and along ***c*** (right).

2. Connection mode

PerBUs, related by a 2-fold screw axis at (1/2,1/2) and a 3-fold axis at <2/3,1/3> (both axes parallel to ***c***), are connected into the ***ab*** plane through 8- and 12-ring channels as depicted in Figure 2.

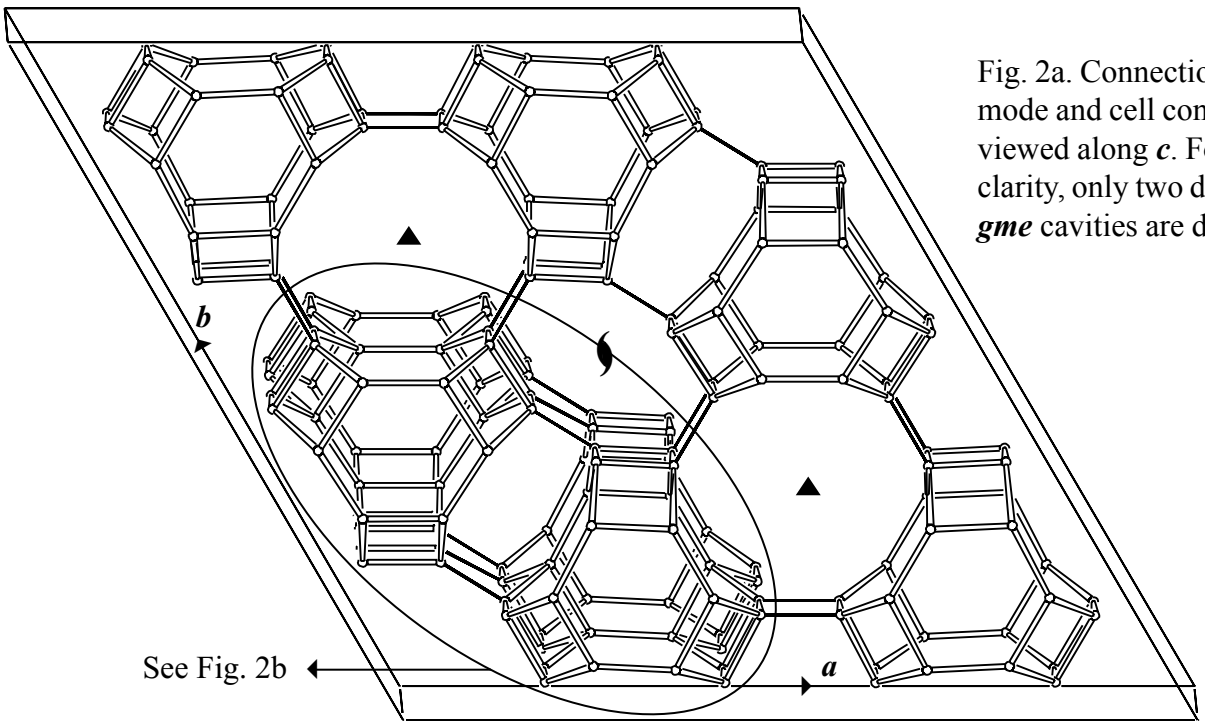

Fig. 2a. Connection mode and cell content viewed along ***c***. For clarity, only two double ***gme*** cavities are drawn.

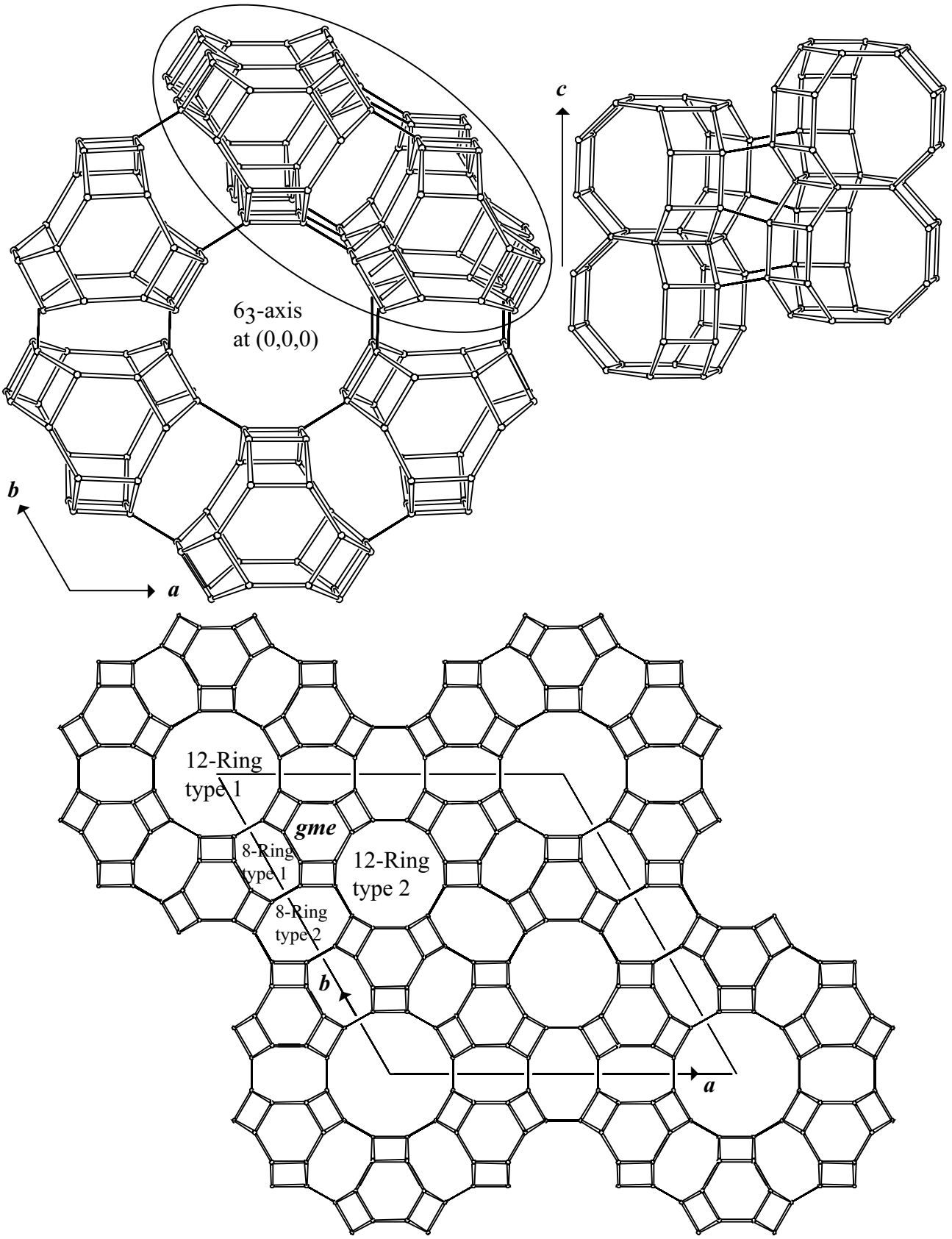

Fig. 2b. Top left: PerBUs, related by a rotation of 60º about ***c*** and a shift of ½***c*** (i.e. related by a 6_3-axis), are connected into a circular unit through 8-ring channels of type 1. For clarity, only two "double" ***gme*** cavities are drawn (see also Figure 2a). Top right: View of the inset perpendicular to ***c***, illustrating the connection mode between these "double" ***gme*** cavities. Bottom: Circular units, related along ***a*** and ***b*** by pure translations, are connected through 8-ring channels of type 2. A second type of 12-ring channels is formed.

3. Channels and/or cages

Two types of 8- and 12-ring channels are parallel to ***c***. The position of the chanels and ***gme*** cavity is indicated in Figure 2b.The first type of 12-ring channels is one-dimensional and equivalent to the 12-ring channel in **MAZ**. The second type of 12-ring channels is also found in **MOZ** and **OFF**.This second type of 12-ring channels has commen 8-rings with ***gme*** cavities and are interconnecting through these cavities to the 8-ring channels of type 1. The 8-ring channel of type 1is topologically equivalent to (one of) the 8-ring channels in **EON**, **MON**, **MAZ**, **MOR**, **RSN** and **VSV**. The 8-ring channel of type 2 is one-dimensional. The ***gme*** cavity (shown in Figure 1) is also present in **AFT**, **AFX**, **EAB**, **EON**, **GME**, **MAZ** and **OFF**. Channels and there interconnections are shown in Figure 3. The **pore descriptors** are added.

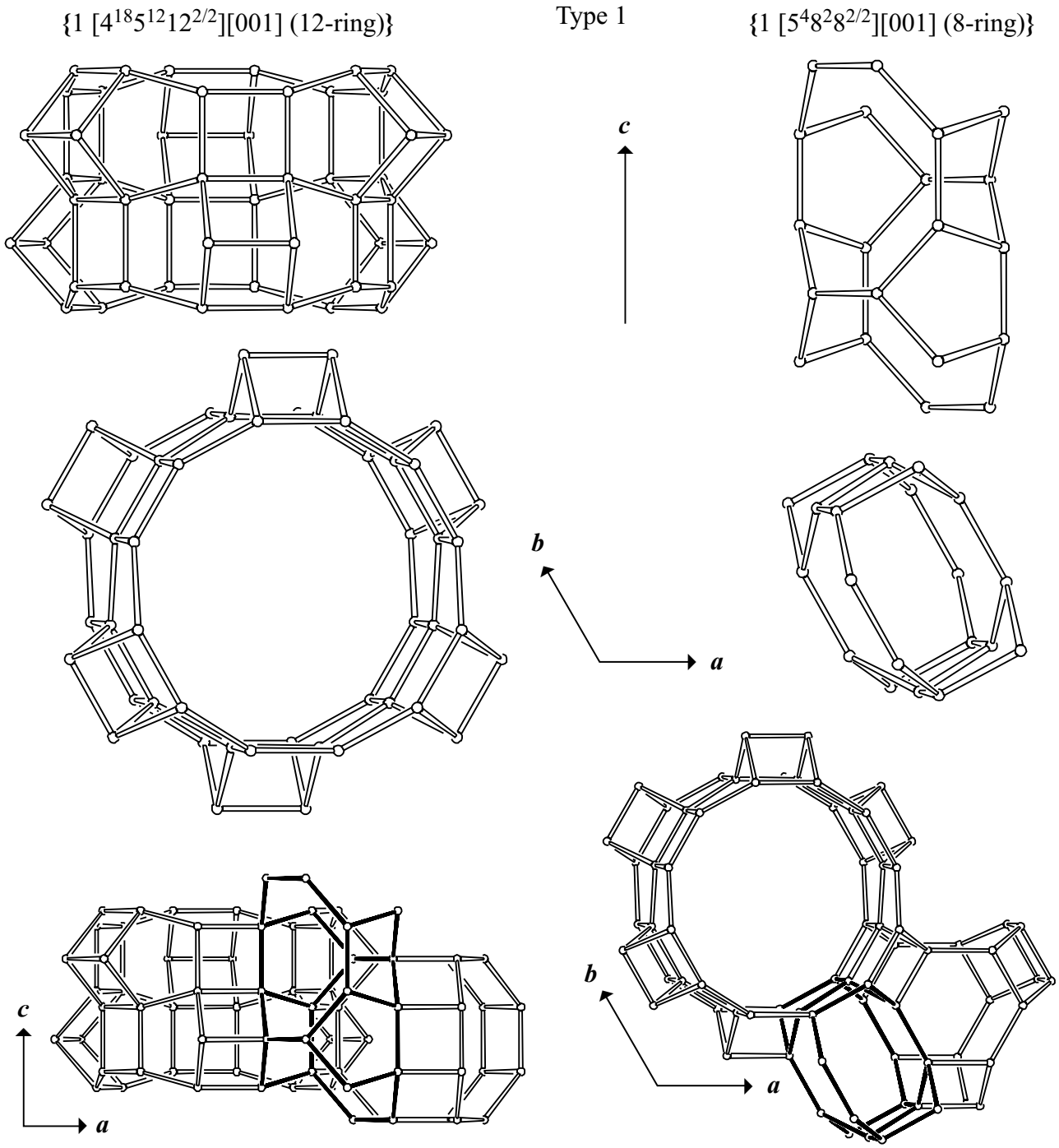

Fig. 3a. 12-Ring channel and 8-ring channel of type 1 viewed along <120>
(top) and along ***c*** (middle) and linkage of channels (8-ring channel in bold) and ***gme*** cavity (bottom).

Type 2

{1 [$4^3 6^3 8^3 12^{2/2}$] [001] (12-ring)}

{1 [$4^{14} 5^4 6^2 8^{2/2}$][001] (8-ring)}

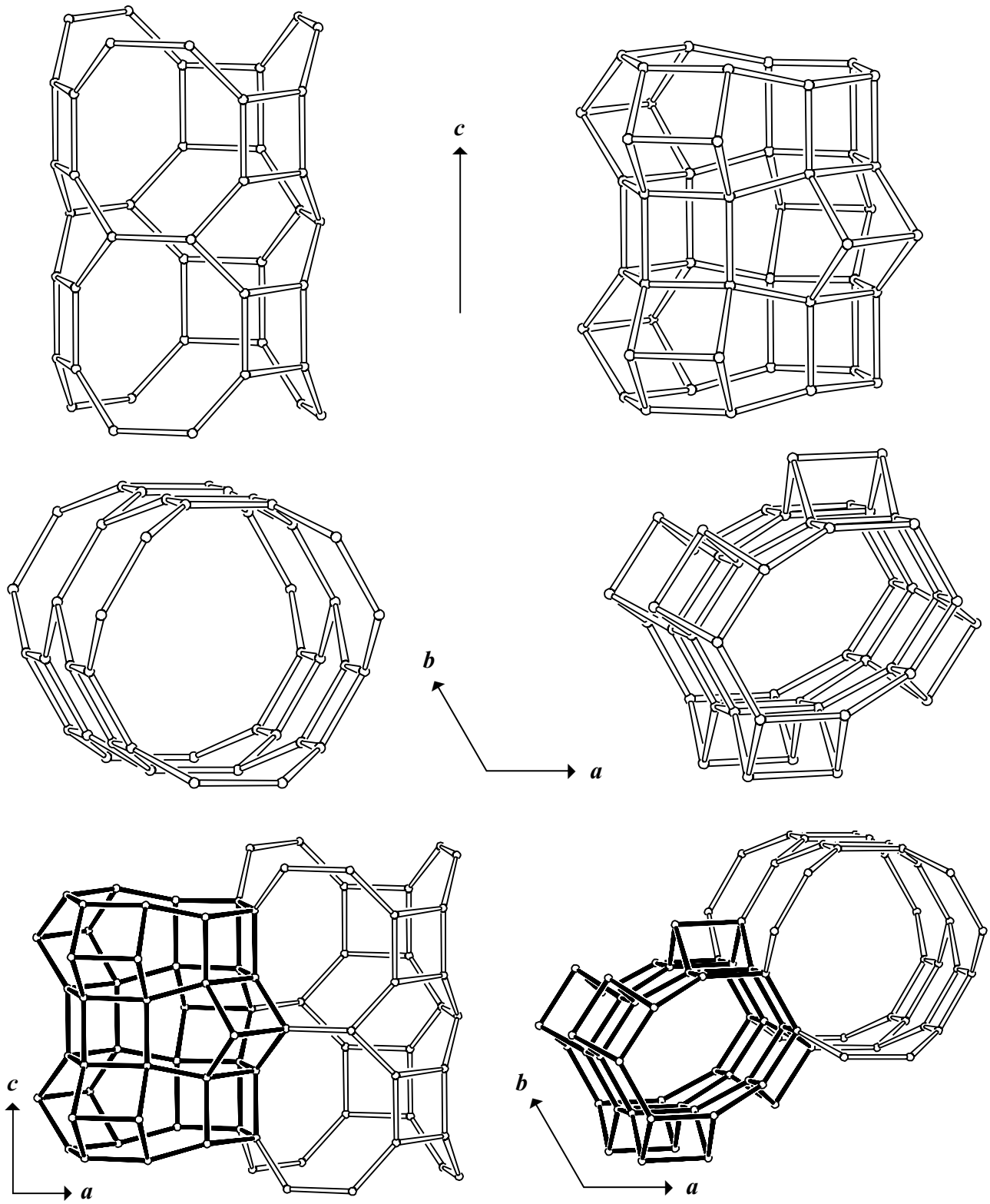

Fig. 3b. 12-Ring channel and 8-ring channel of type 2 viewed along <120> (top) and along ***c*** (middle) and linkage of 12-ring channel and 8-ring channel (in bold) of type 2 (bottom).

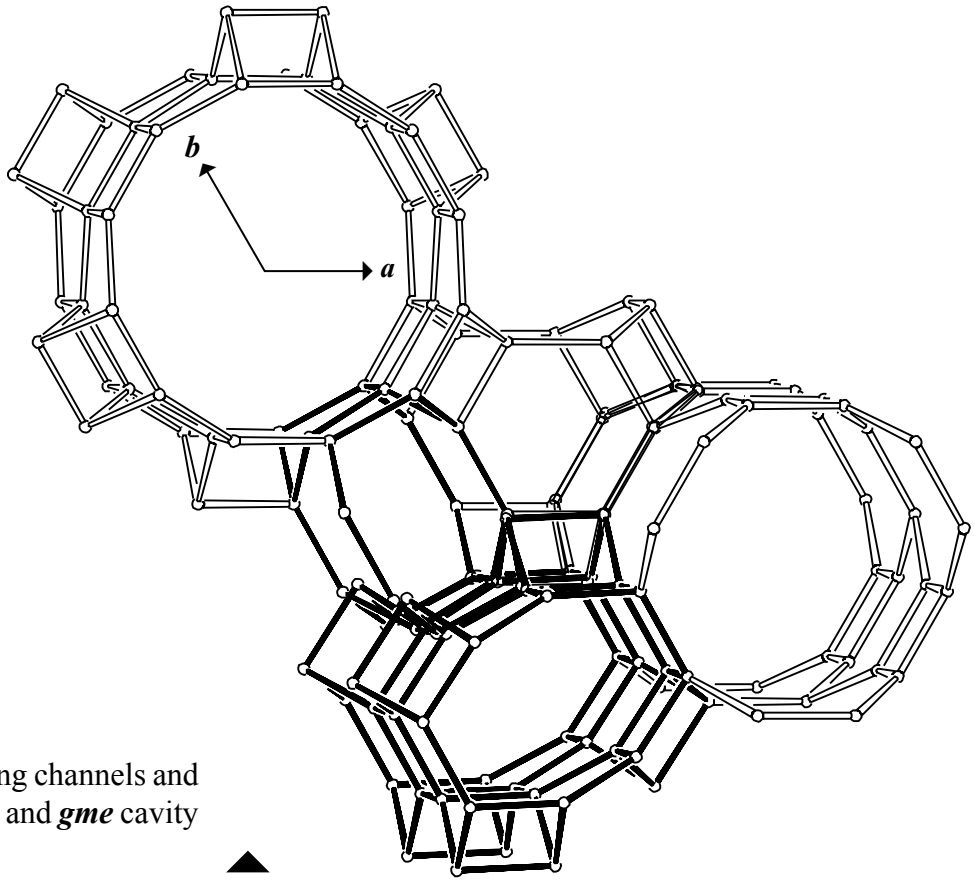

Fig. 3c. Linkage of 12-ring channels and 8-ring channels (in bold) and ***gme*** cavity viewed along along ***c***

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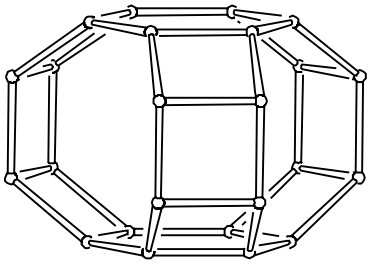
4. Composite Builing Units



gme cavity: {2 [$4^9 6^2 8^3$]}

GME/AFT/AFX/EAB/ EON/LTF/MAZ/OFF

Fig. 4. Composite Building Unit.

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5. Supplementary information

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**).