Building scheme for SFE and SSY

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:

SFE and **SSY** can be built using the zigzag chain (bold in Figure 1(a); left). The repeat distance along the zigzag chain is about 5.2 Å. The repeat unit consists of 2 T atoms. Seven zigzag chains are connected into an infinite building unit (Figure 1(a); left). This infinite building unit can also be built using 5-1 and 5-3 units (T14-units; bold in Figure 1(a), right; see **Alternative description**). A two-dimensional Periodic Building Unit (PerBU) is obtained when infinite building units, related by pure translations along **x**, are connected along **x** through double zigzag chains into the layer shown in Figure 1(b). [Compare this PerBU with the PerBUs in **MTT**, **MTW**, **SFH**, **SFN** and **TON**]

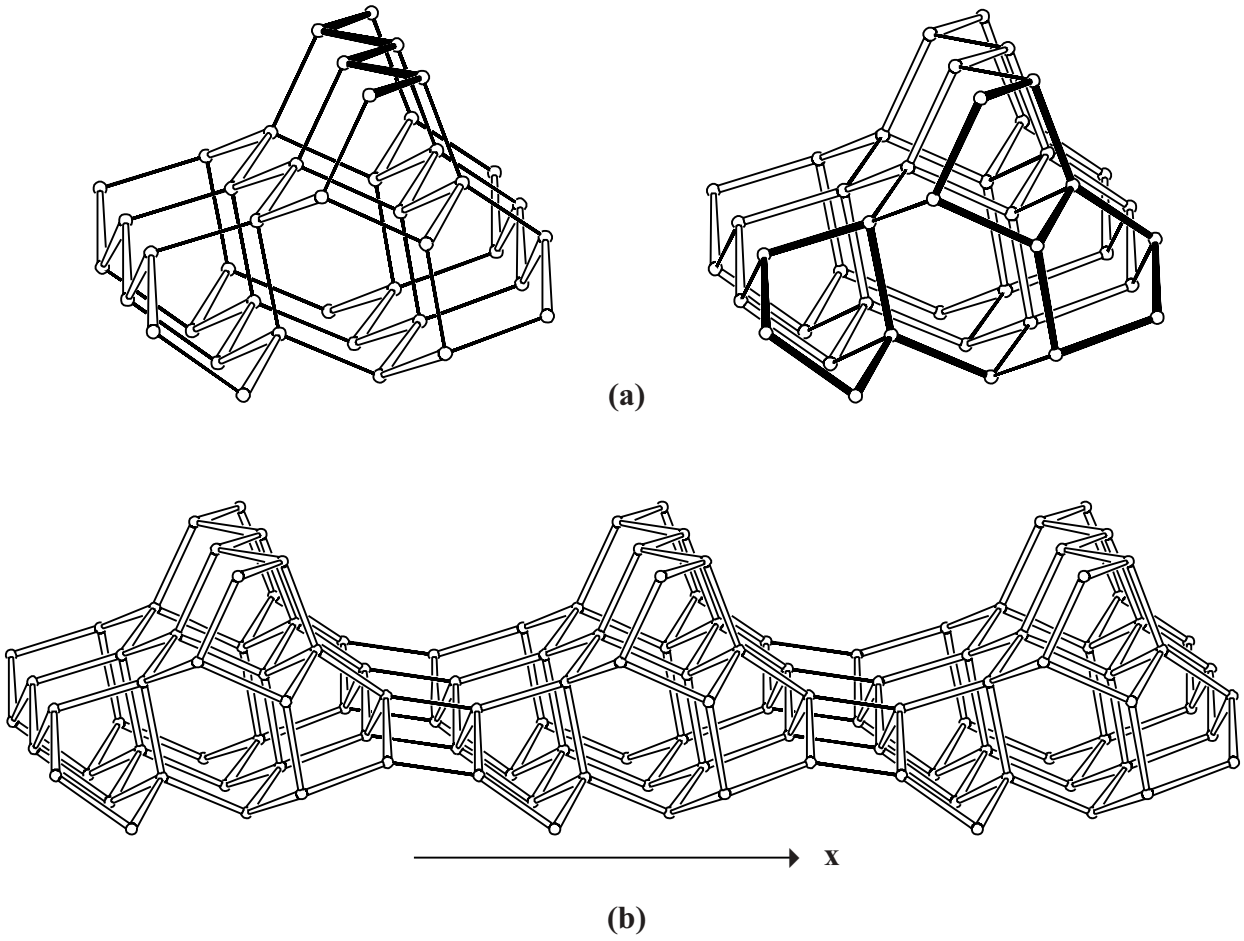

Figure 1. (a): Infinite building unit constructed from seven zigzag chains (left) and from T14-units (right); (b): PerBU obtained when infinite building units are connected along **x**.

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2. Connection mode: See next page.

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Neighboring PerBUs can be connected along **y** through (fused) 5- and 6-rings in two different ways:
(1): neighboring PerBUs are related by pure translations along **y**;
(2): neighboring PerBUs are related by a rotation of 180º about the plane normal **y**.

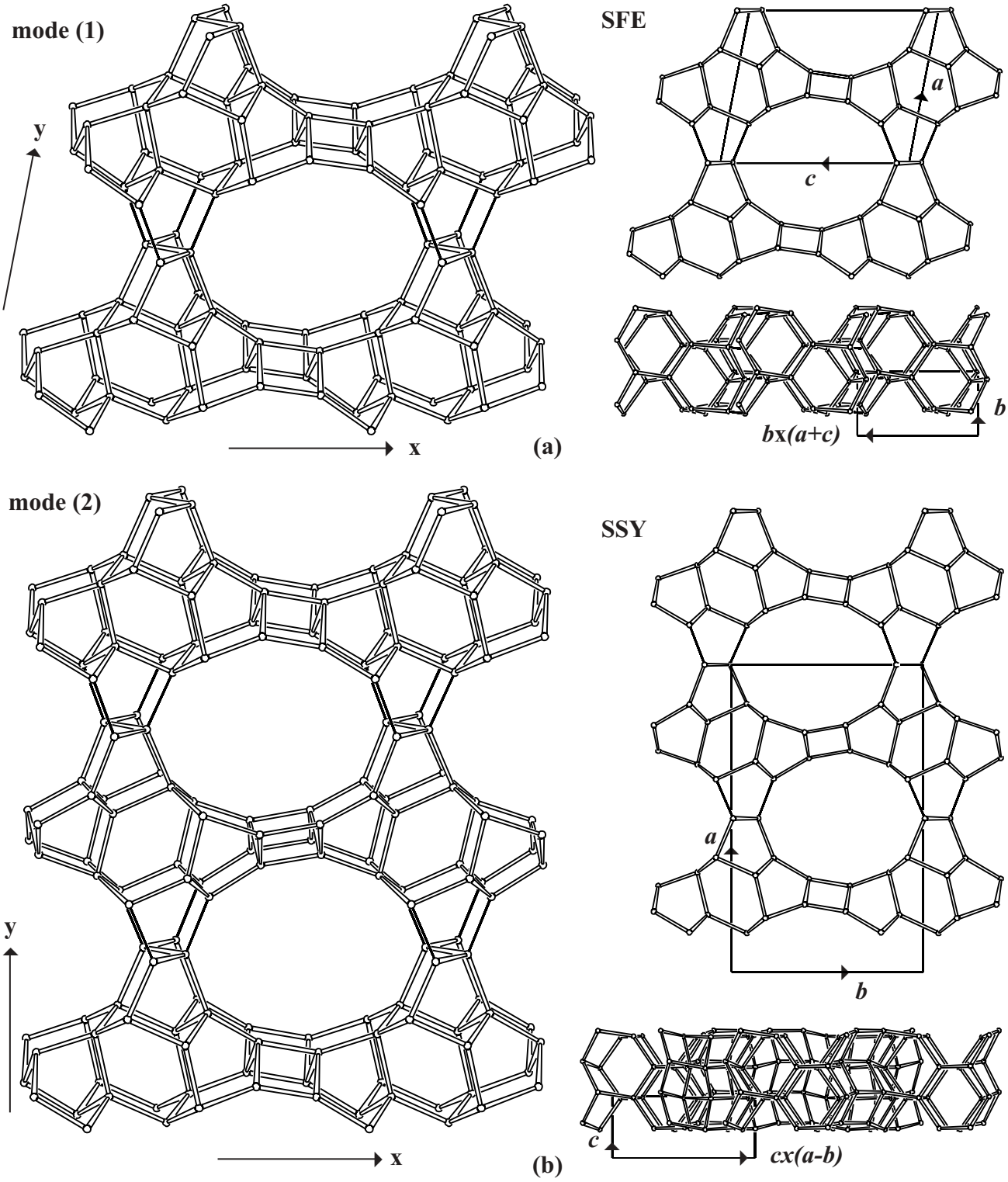

Figure 2. (a): Perspective view along **z** of the connection mode **(1)** in **SFE** (left) and parallel projection of the unit cell content along ***b*** and along [101] (top and bottom right); (b): connection mode **(2)** in **SSY** (left) and parallel projection of the unit cell content along ***c*** and along [1-10] (top and bottom right). Only two repeat units of the PerBUs are drawn for clarity.

3. Projections of the unit cell content:

Pure **SFE** and **SSY**, shown in Figure 2, are obtained when neighboring PerBUs are exclusively related by translations and by 2-fold screw axes, respectively.

4. Channels and/or cages:

The one-dimensional non-interconnecting 12-ring channels in **SFE** and **SSY** are depicted in Figure 3. The **pore descriptor**, equal for both channels, is added.

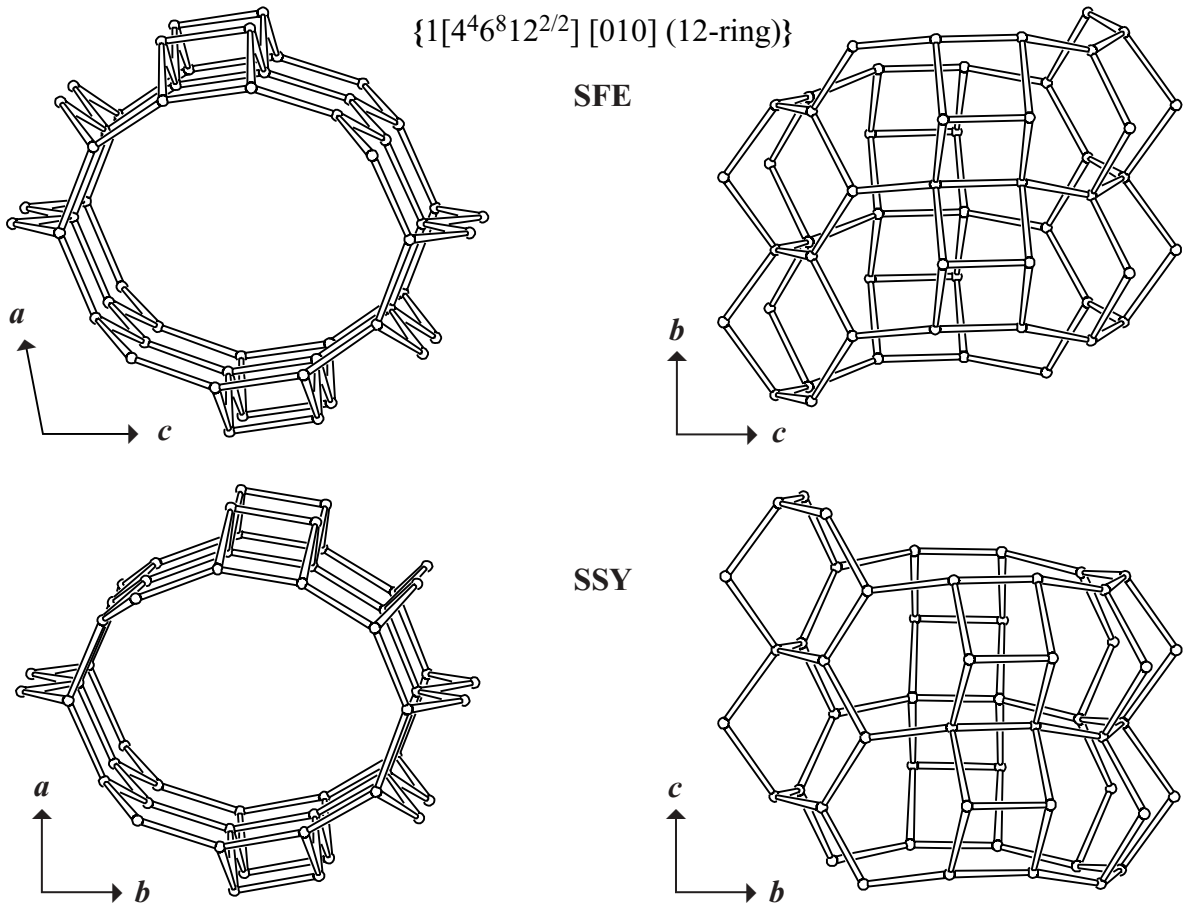

Figure 3. Channel in **SFE** in perspective view along ***b*** (top left) and along ***a*** (top right), and channel in **SSY** in perspective view along ***c*** (bottom left) and along ***a*** (bottom right).

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**).

Alternative description using (modified) 5-rings

Several framework types, like **SFE** and **SYY**, 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**).