1. Periodic Building Unit:

NES can be built using building units composed of 17 T atoms: three finite zigzag chains (5 T atoms each and parallel to *a*) and a T2-dimer (Figure 1(left)), or two 5-1 units and a 5-ring (Figure 1(right)) [See: **Alternative description**; Compare this building unit with those in **BIK**, **CAS** and **NSI**]. The two-dimensional Periodic Building Unit (PerBU) is obtained when T17-units, related along *b* by a 2-fold screw axis parallel to *b* and related along *c* by a 2-fold axis parallel to *a*, are connected into the *bc* layer shown in Figure 2. [Compare this PerBU with those in **EUO** and **NON**]
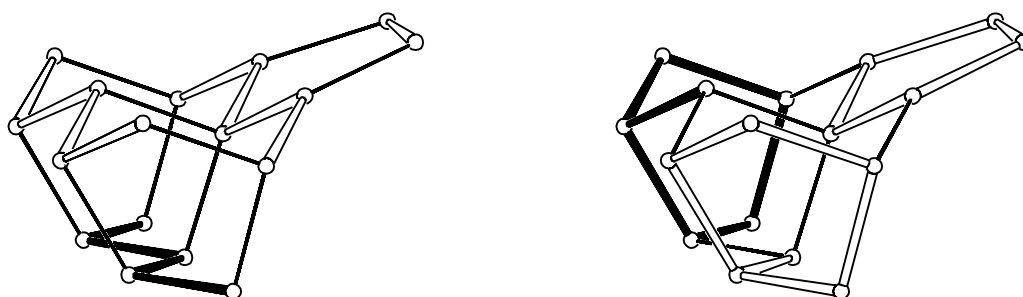

Figure 1. Finite building unit, viewed along *a*, built from three (finite) zigzag chains (one in bold) and a T2 dimer (left) and finite building unit built from two 5-1 units (one in bold) and a 5-ring (right).
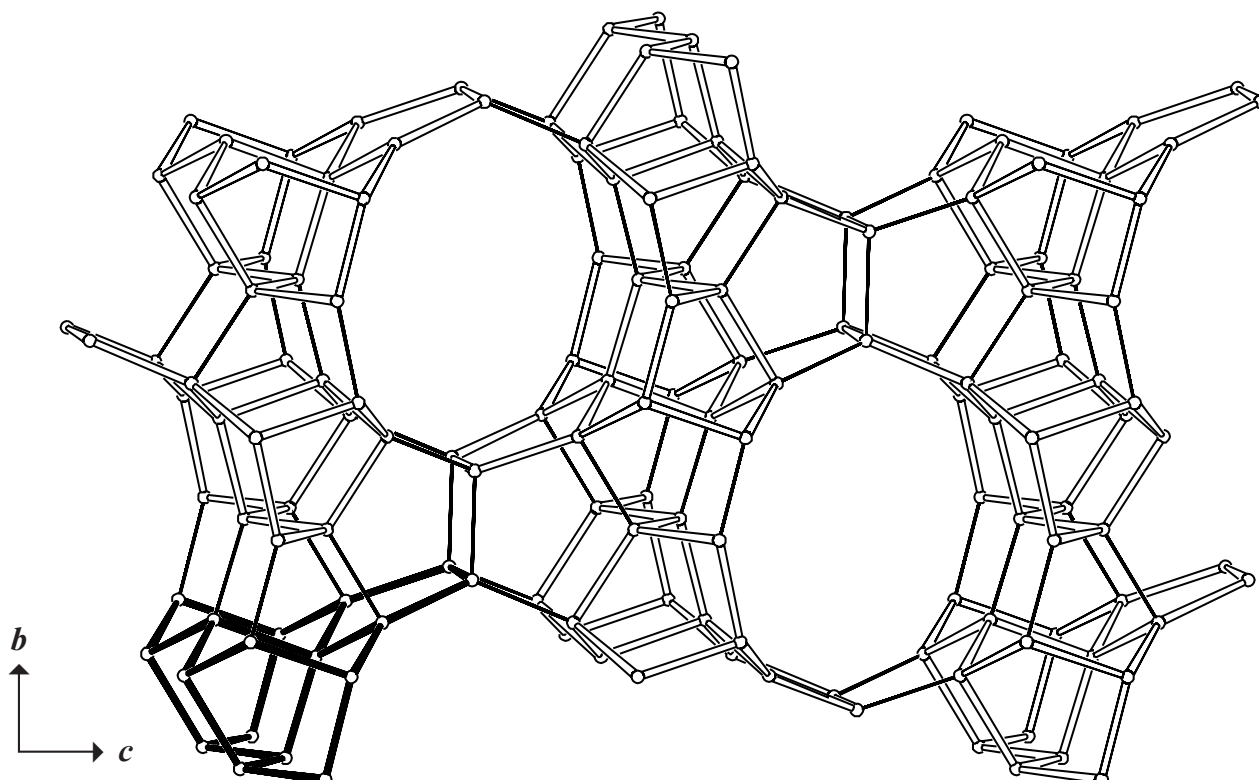

Figure 2. PerBU in **NES** viewed along *a* (one T17-unit in bold. [Figure 2 is continued on next page]
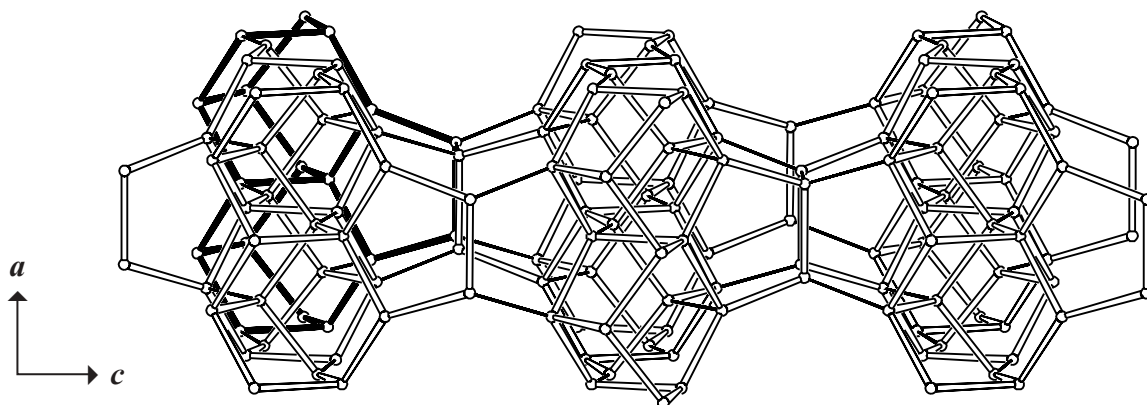
Figure 2 [Cont'd]. PerBU in **NES** viewed along **b**.

2. Connection mode:

Neighboring PerBUs, related by a shift of ½**c** (or ½**b**), are connected along **a** as shown in Figure 3.
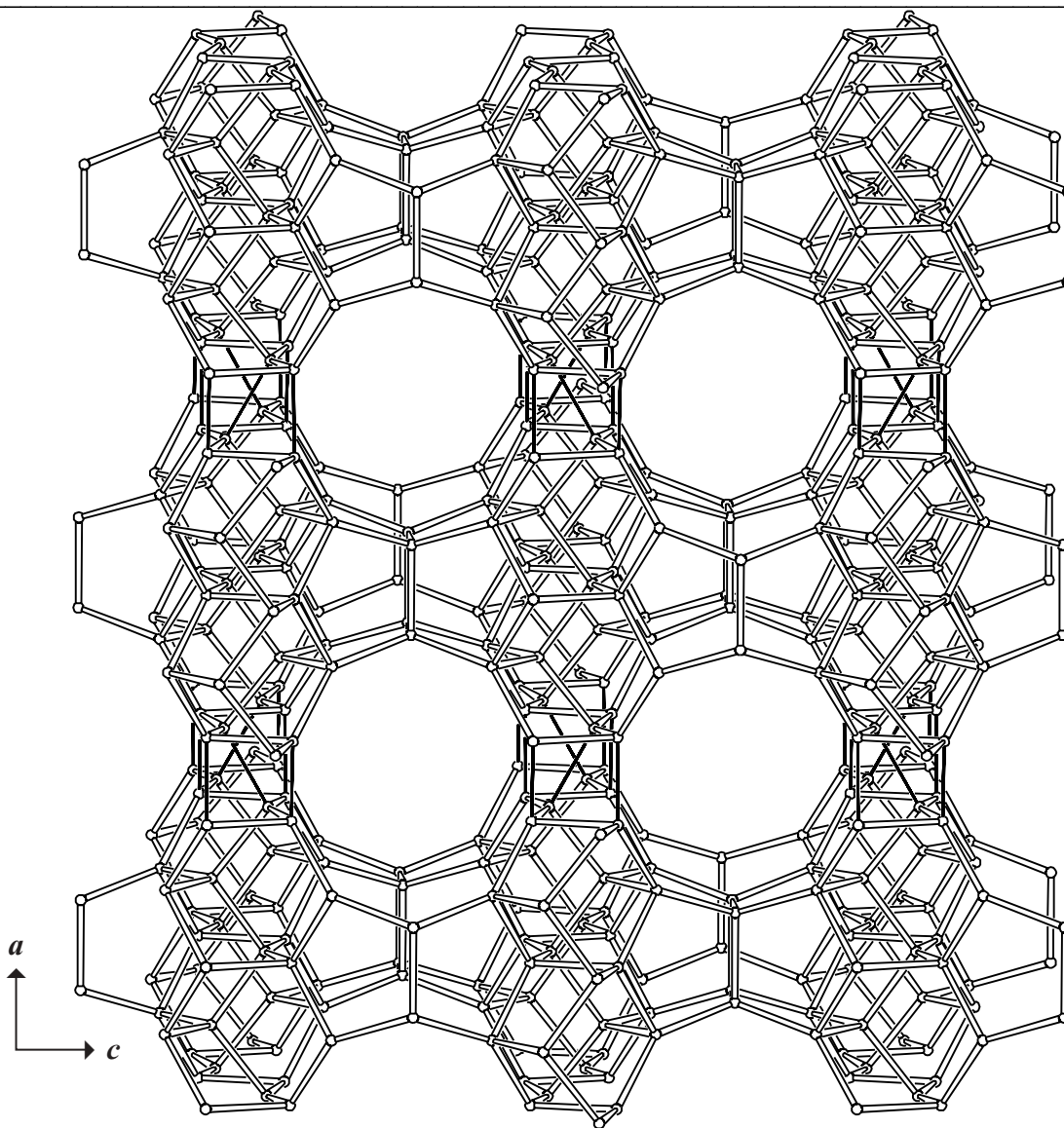

Figure 3. Connection mode in **NES** viewed along **b**.
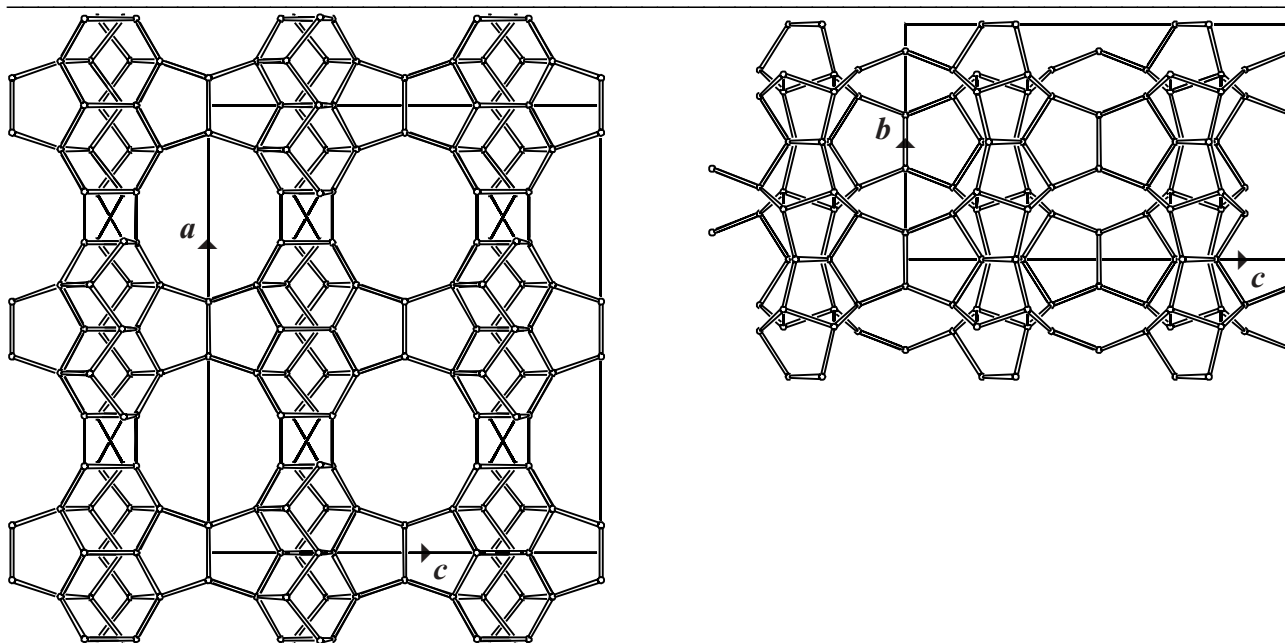
3. Projections of the unit cell content:

Figure 4. Unit cell content in **NES** projected along *b* (left) and along *a* (right). ▲

4. Channels and/or cages:

The double-cavity in **NES** is depicted in Figure 5. The **pore descriptor** is added. Fused double-cavities form 10-ring channels parallel to *b* as illustrated in Figure 6. The 10-ring channels are inter-connected through 12-rings in the double-cavity.
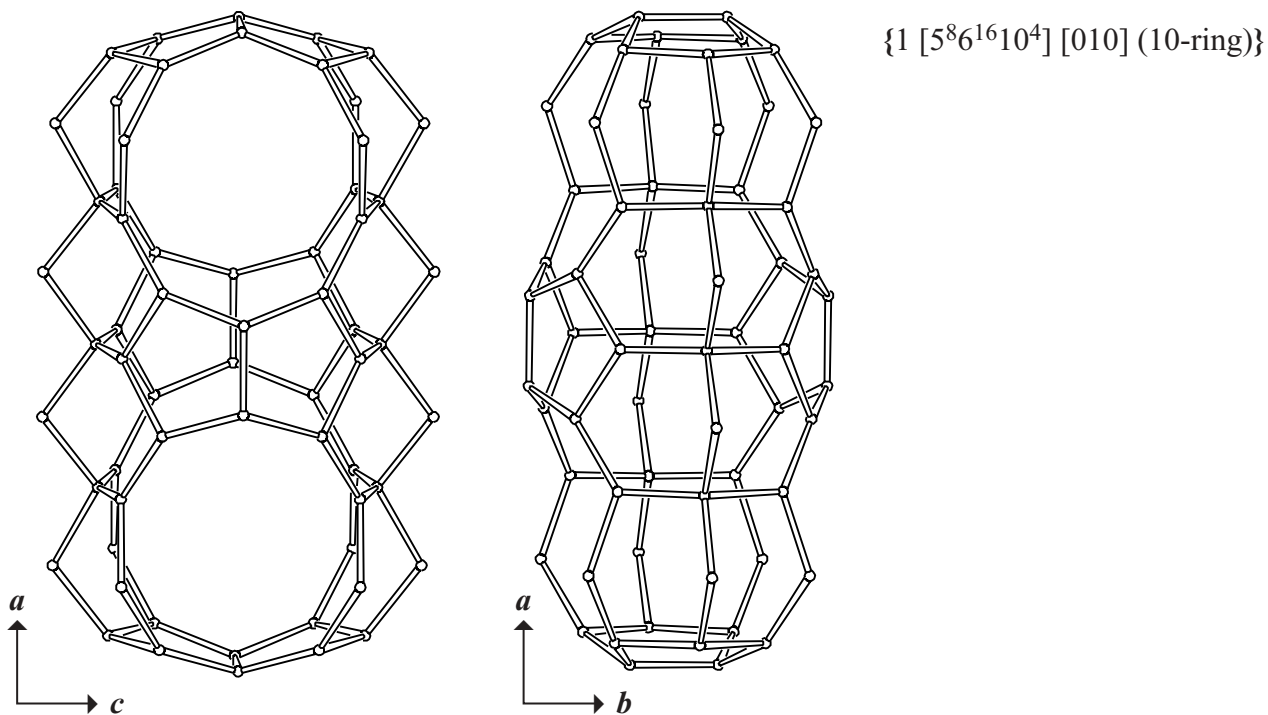

$\{1 \ [5^8 6^{16} 10^4] \ [010] \ (10\text{-ring})\}$

Figure 5. Double-cavity viewed along *b* (left) and along *c* (right). The two sets of 10-ring windows are interconnected through 12-rings in the double-cavity.
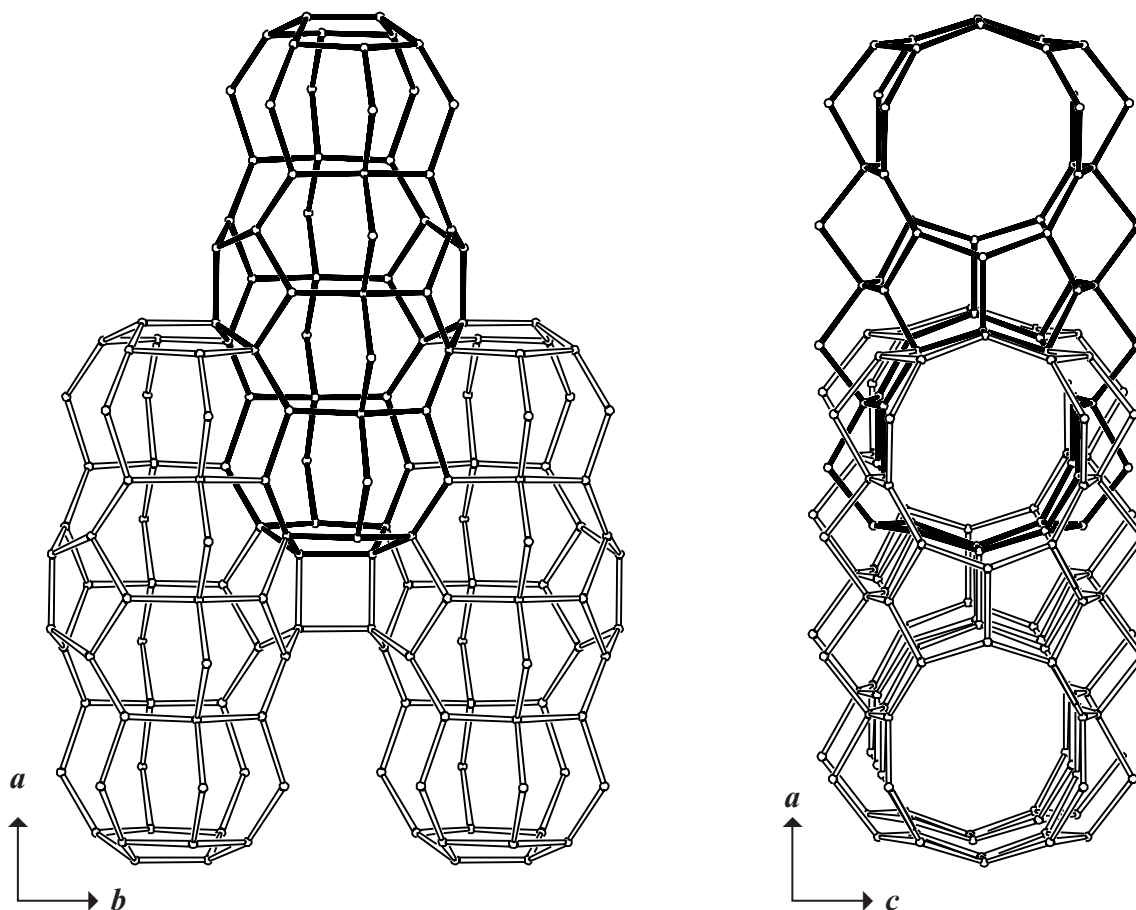
Figure 6. Fused double-cavities, viewed along *c* (left) and along *b* (right), form interconnected 10-ring channels along *b*.

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5. Supplementary information:

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 **NES**, 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**).

▲