

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:

The interrupted framework of tetragonal **-RON** can be built using units of 28 T atoms. The T28-unit consists of four 3-rings (bold in Figure 1) and two 6-[1,1] units. The one dimensional Periodic Building Unit (PerBU) is obtained when T28-units, related by pure translations along  $c$ , are connected along  $c$  as illustrated in Figure 1(b).

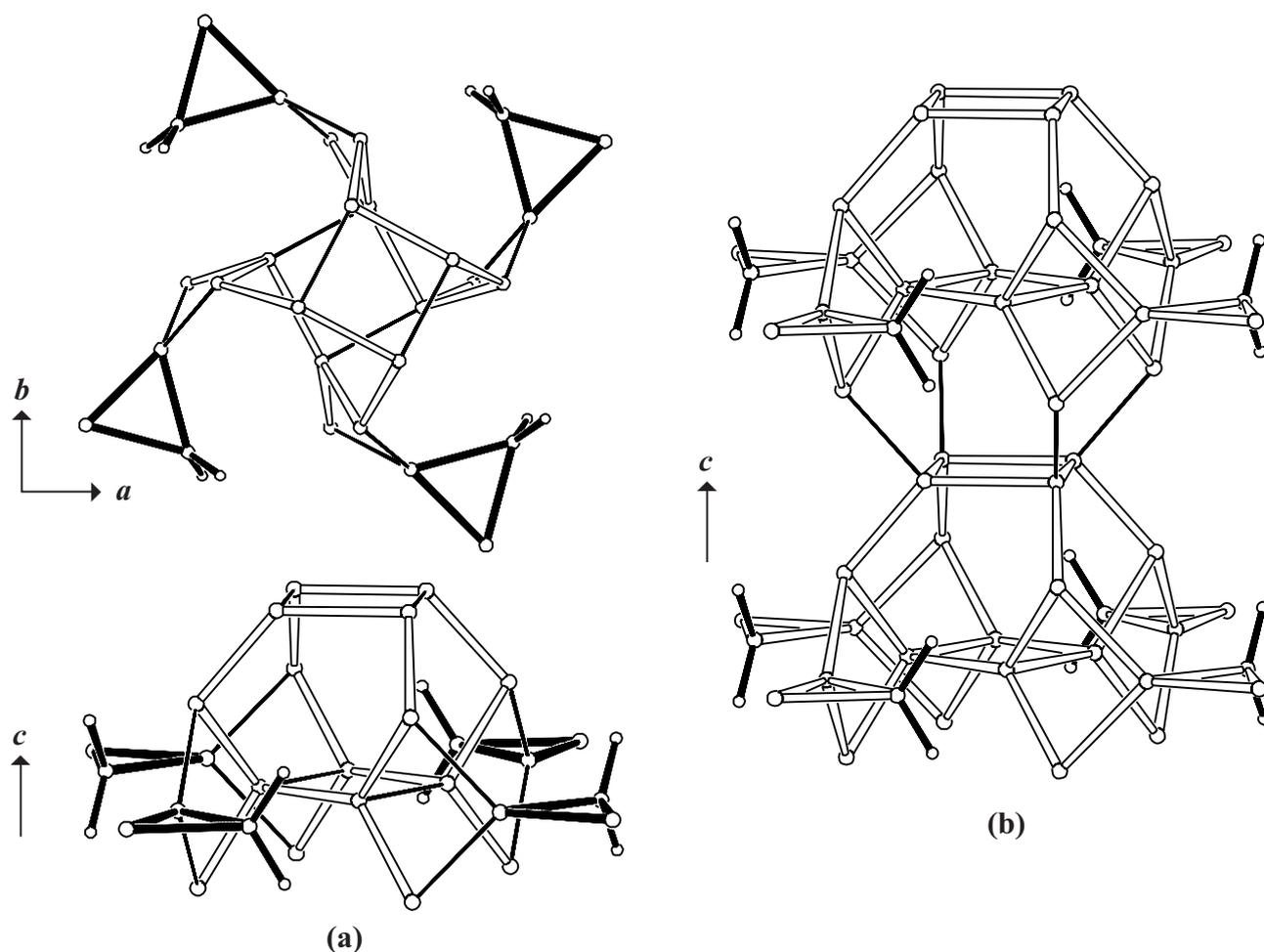


Figure 1. (a): T28-unit viewed along  $c$  (top) and perpendicular to  $c$  (bottom). Four 3-rings (in bold) are connected about the 4-fold  $c$  axis. In each 3-ring one T atom is connected to two terminal oxygen atoms (indicated by bold bonded small circles). The 3-rings are connected to two 6-[1,1] units; (b): PerBU viewed perpendicular to  $c$ . T atoms, bearing the terminal O atoms, are not involved in the connections along  $c$ .

## 2. Connection mode:

Neighboring PerBUs, related by a shift of  $\frac{1}{2}(a + b + c)$ , are connected through 4-rings as depicted in Figure 2.

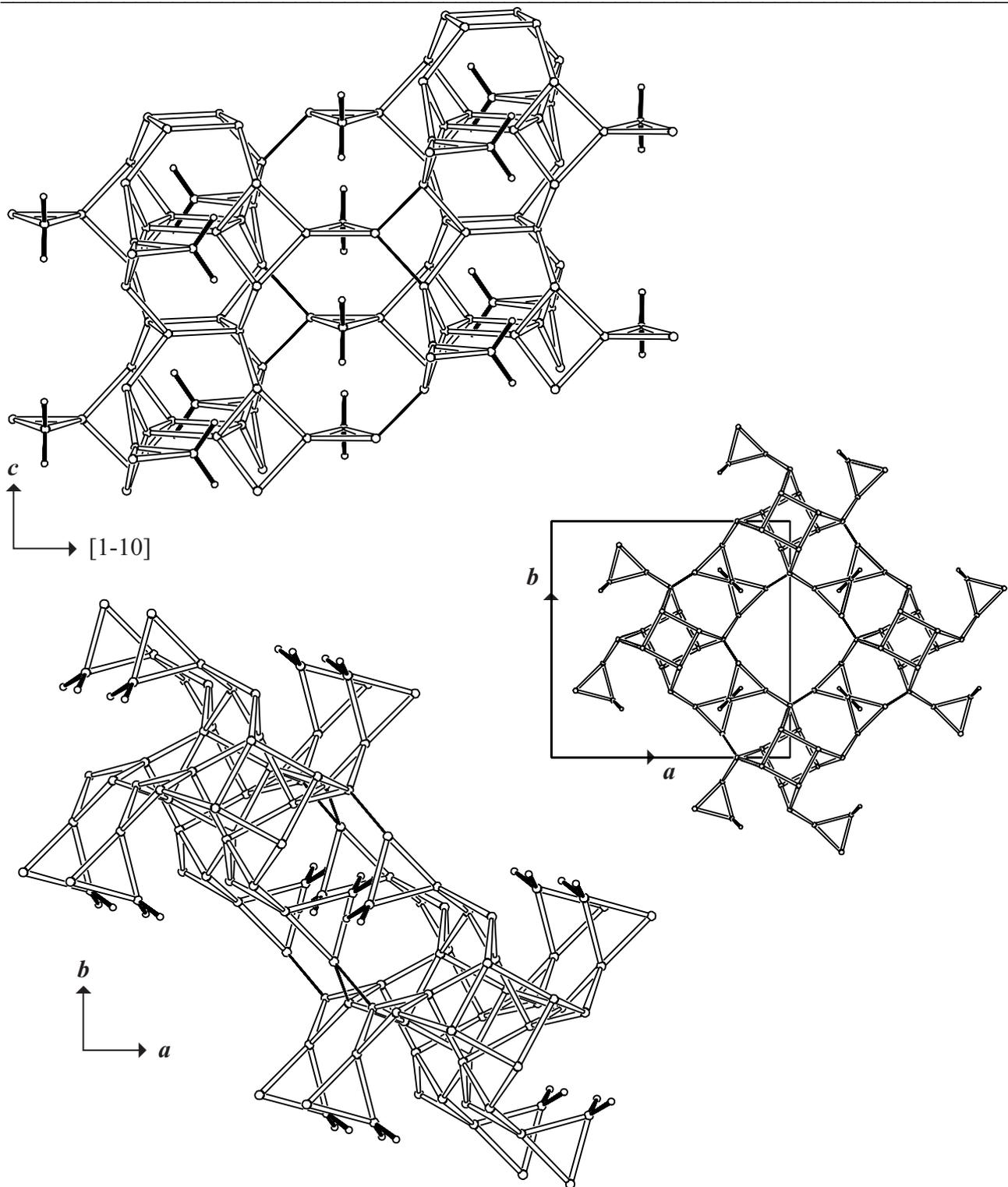


Figure 2. Connection mode viewed along  $[110]$  (top left), and along  $c$  (bottom left), and projection of the unit cell content along  $c$  (right).

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

#### 4. Channels and/or cages:

The 12-ring channel in **-RON** is shown in Figure 4 together with the terminal  $\text{TO}_2$  groups. The **pore descriptor** is added. Neighboring 12-ring channels block the 10-ring windows perpendicular to  $\langle 110 \rangle$  as illustrated in Figure 5.

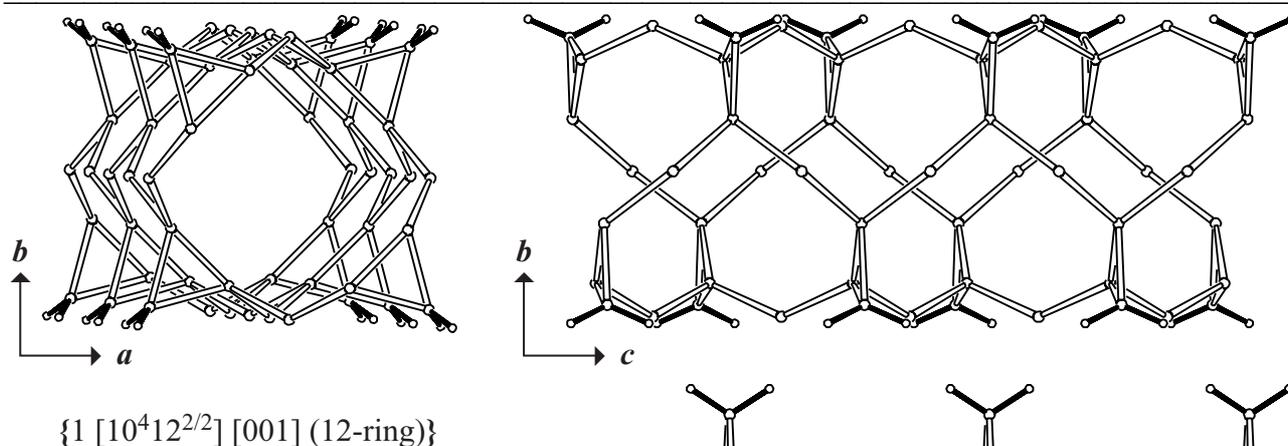


Figure 4. 12-Ring channel viewed along  $c$  (top left), along  $a$  (top right), and along  $[110]$  (bottom).

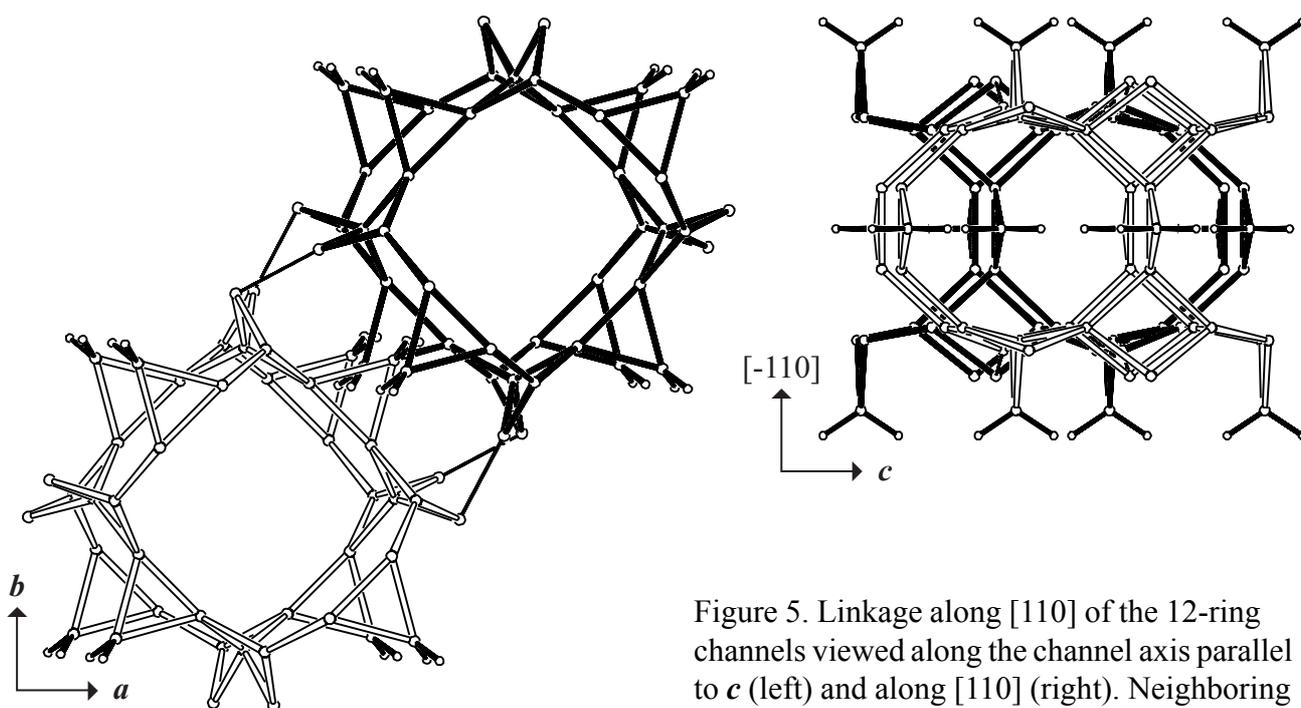


Figure 5. Linkage along  $[110]$  of the 12-ring channels viewed along the channel axis parallel to  $c$  (left) and along  $[110]$  (right). Neighboring 12-ring channels block the 10-ring windows.



## 5. Supplementary information:

### *Other framework types containing (modified) single 3- and/or 4-rings*

Single 3- and/or 4-rings can be connected in several other ways. In several cases additional T atoms are needed to build the framework.

In the **INTRO**-pages links are given to a detailed description of a sub-set of framework types that contain (modified) single 3- and/or 4-rings (choose: **Single 3- and/or 4-rings**). 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 4**).

