The ITE/RTH Family

1. The Periodic Building Unit (PerBU) equals the layer shown in Fig. 1a and b:

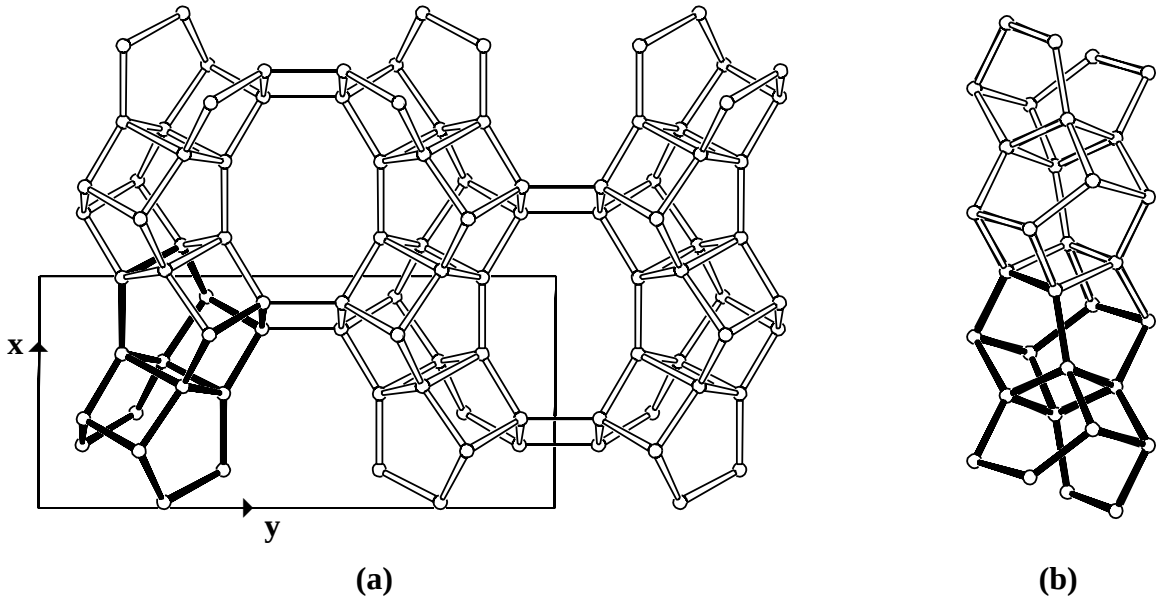

Figure 1: PerBU in the ITE/RTH family of framework types shown along **z** (a) and as a parallel projection along **y** (b)

T16-units (bold in Fig. 1a), consisting of three T4-rings and four T5-rings, are connected into chains after pure translations, ***a***, along **x**. Chains, related by a shift vector of 1/2***a*** (or by a mirror plane perpendicular to **y**), are connected along **y** to form the PerBU of the ITE/RTH family of zeolite framework types.

2. Type of faulting: 1-dimensional stacking disorder of the PBUs along [001].

3. The plane space group symmetry of the PerBU is C 1 m (1).

4. Connectivity pattern of the PerBU:

Neighbouring PerBU's are connected via O-bridges along **z** in two ways:
(a): successive layers are connected after a pure translation along **z**. The resulting connectivity exhibits inversion (**i:** $_o$) symmetry.
(b): successive layers are connected after a 180^o rotation about **x** (or **z**). The connectivity now shows mirror symmetry (**m:|**)between successive layers.

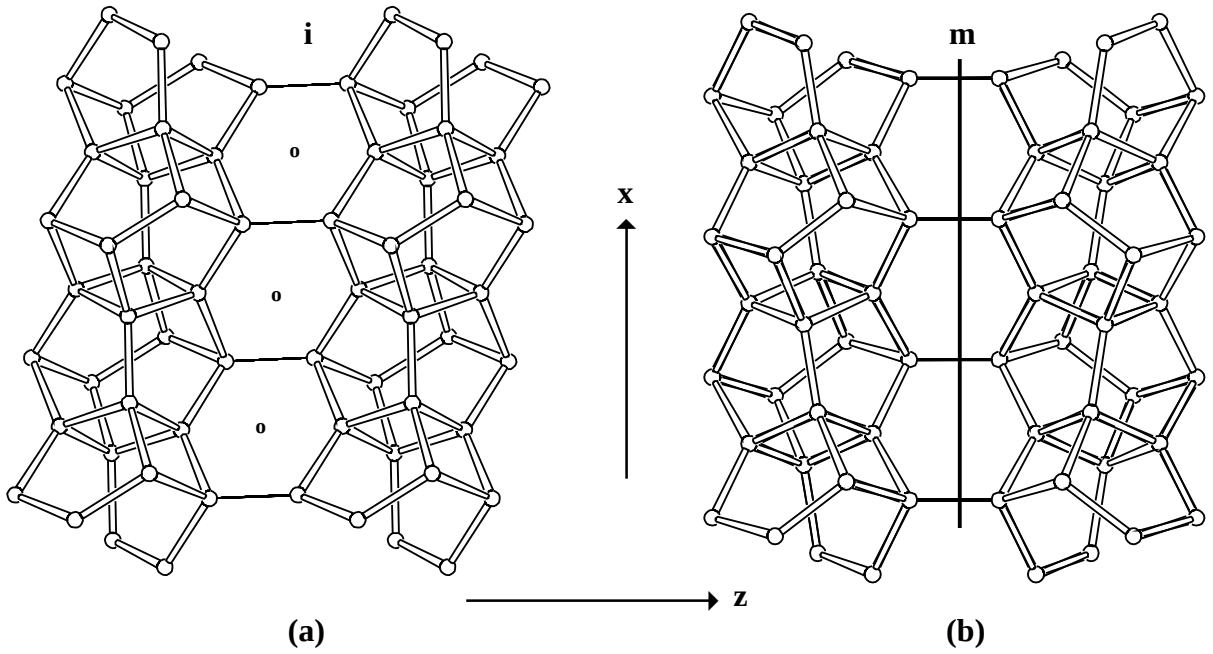

Figure 2: Connectivity of the PerBU shown parallel to the **xy**-plane

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Once the distribution of the symmetry elements **i** and **m** along **z** is known the 3-dimensional framework is defined.

An e xample of an intermediate structure in the ITE/RTH family of zeolites is shown in Figure 3:

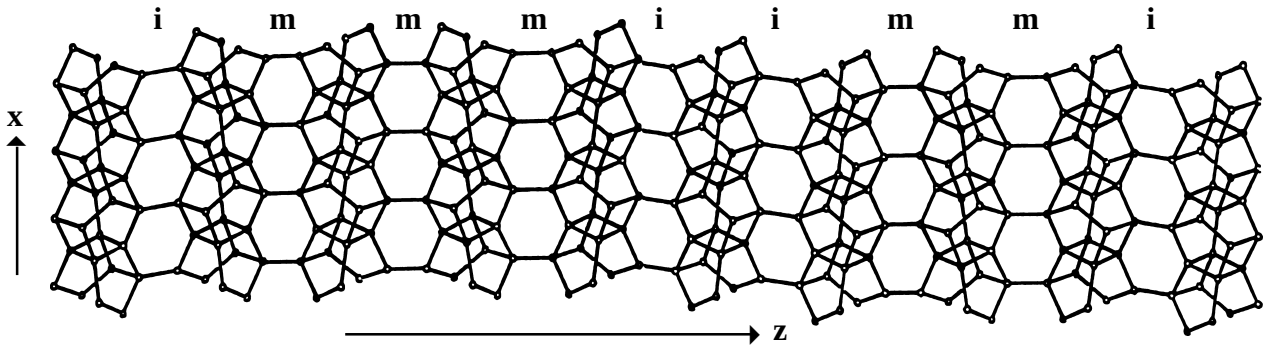

Figure 3: Connectivity sequence of PerBU's with **m** and **i** as symmetry elements

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5. The simplest ordered end-members in the ITE/RTH family are presented in Figure 4:

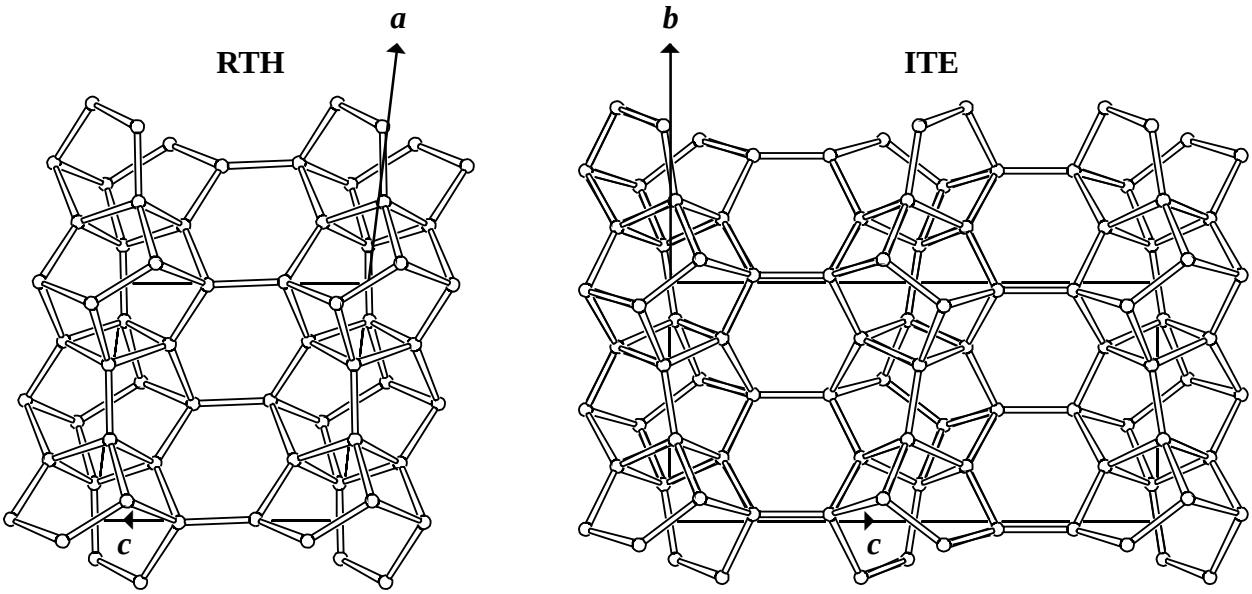

Figure 4: Parallel projection of the cell content of the two simplest ordered end-members in the ITE/RTH familty seen along ***b*** in RTH (left) and along ***a*** in ITE (right)

Pure RTH (1) and ITE (2) are obtained by exclusively stacking neighbouring layers by **i** and **m**, respectively.

6. Faulted materials synthesized and characterized to date:

SSZ-36 (3)

7. Supplementary material

to be added

8. References

(1) S. Vortmann, B. Marler, H. Gies and P. Daniels, Microporous Mater. **4**, 111 (1995).

(2) M.A. Camblor, A. Corma, P. Lightfoot, L.A. Villaescusa and P.A. Wright, Angew. Chem., Int. Edit. Engl. **36**, 2659 (1997).

(3) P. Wagner, Y. Nakagawa, G.S. Lee, M.E. Davies, S. Elomari, R.C. Medrud and S.I. Zones, J. Am. Chem. Soc. **122**, 263 (2000).