

Figure 5.7 Slow-growing faces become larger. (a) Potential crystal faces on halite such as $\{111\}$ are covered either with all Na^+ or Cl^- and have a net charge and high surface energy. A very strong attraction for successive layers of Na^+ and Cl^- on the $\{111\}$ faces produces high growth rates. Faces such as $\{100\}$ have equal numbers of Na^+ and Cl^- , are uncharged, and have low surface energy. Growth rates are slow. (b) Section through the halite crystal showing $\{100\}$ and $\{111\}$ faces. Each successive layer on the $\{111\}$ faces is thicker than on the slow growing $\{100\}$ faces. The $\{111\}$ faces rapidly grow out of existence.

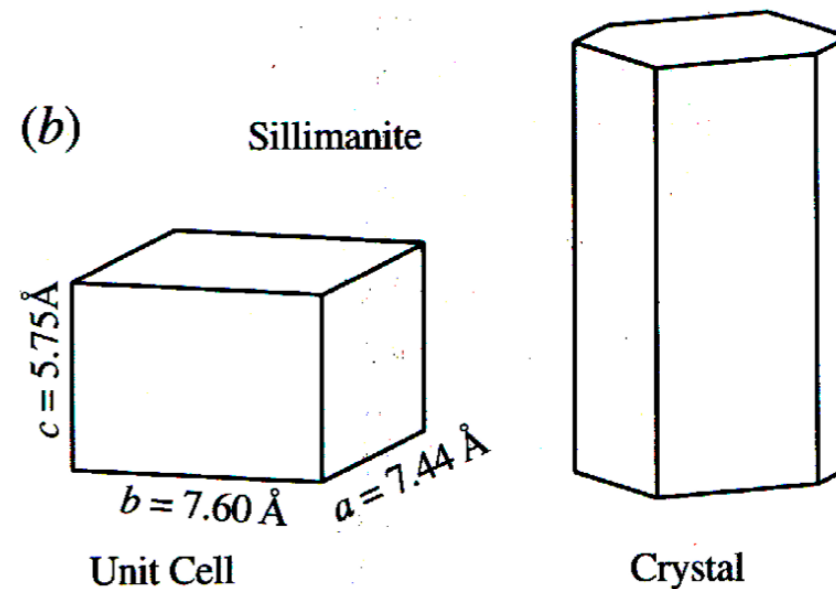
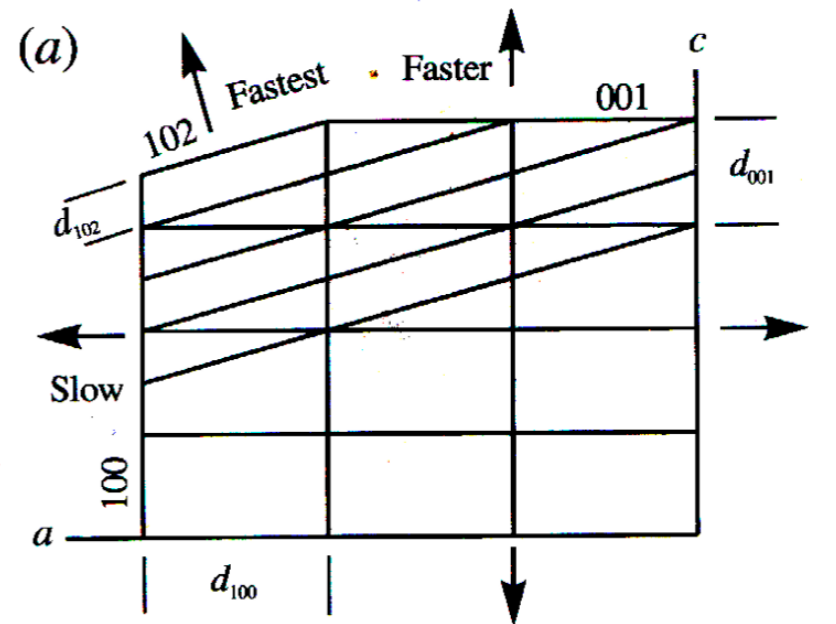


Figure 5.8 Growth rates of crystal faces are inversely proportional to interplanar (d) spacing. (a) Growth is slowest normal to the $\{100\}$ face because d_{100} is largest. Growth is faster normal to the $\{001\}$ face and faster yet normal to the $\{102\}$ face. The crystal should therefore be elongate parallel to the c axis and $\{102\}$ should be small or nonexistent. (b) Sillimanite. The c unit cell dimension is shortest so crystals are elongate along that axis.