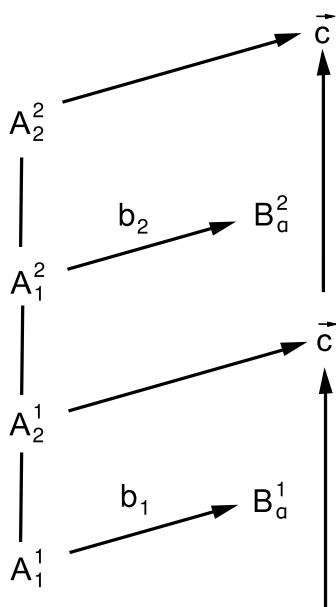


isomorphous structures

Also contains definition of: enantiomorphous structures *in polymers*

in polymers

In the crystalline state, polymer chains are generally parallel to one another but neighbouring chains of equivalent conformation may differ in chirality and/or orientation. Chains of identical chirality and conformation are isomorphous. Chains of opposite chirality but equivalent conformation are enantiomorphous. For example, two ...TG⁺TG⁺TG⁺... helices of isotactic poly(propylene) are isomorphous. Isotactic poly(propylene) chains of the ...TG⁺TG⁺TG⁺... and ...G⁻TG⁻TG⁻T... types are mutually enantiomorphous. With regard to orientation, consider a repeating side group originating at atom A_1^i , the first atom of the side group being B_α^i . For certain chain symmetries (helical, for instance) the bond vectors $\vec{b}(A_1^i, B_\alpha^i)$ have the same components (positive or negative) $\frac{\vec{b} \cdot \vec{c}}{|\vec{c}|}$ along the c axis for every i .



Two equivalent (isomorphous or enantiomorphous) chains in the crystal lattice, having identical components of the bond vectors along c , both positive or both negative, are designated isoclinal; two equivalent chains having bond vectors along c of the same magnitude but opposite sign are designated anticlinal.

Source:

Purple Book, p. 43