Answer on Question #60748, Chemistry / Inorganic Chemistry

Do optical isomers show different spatial arrangement of groups in space, as all other stereo isomers (geometric isomers) do?

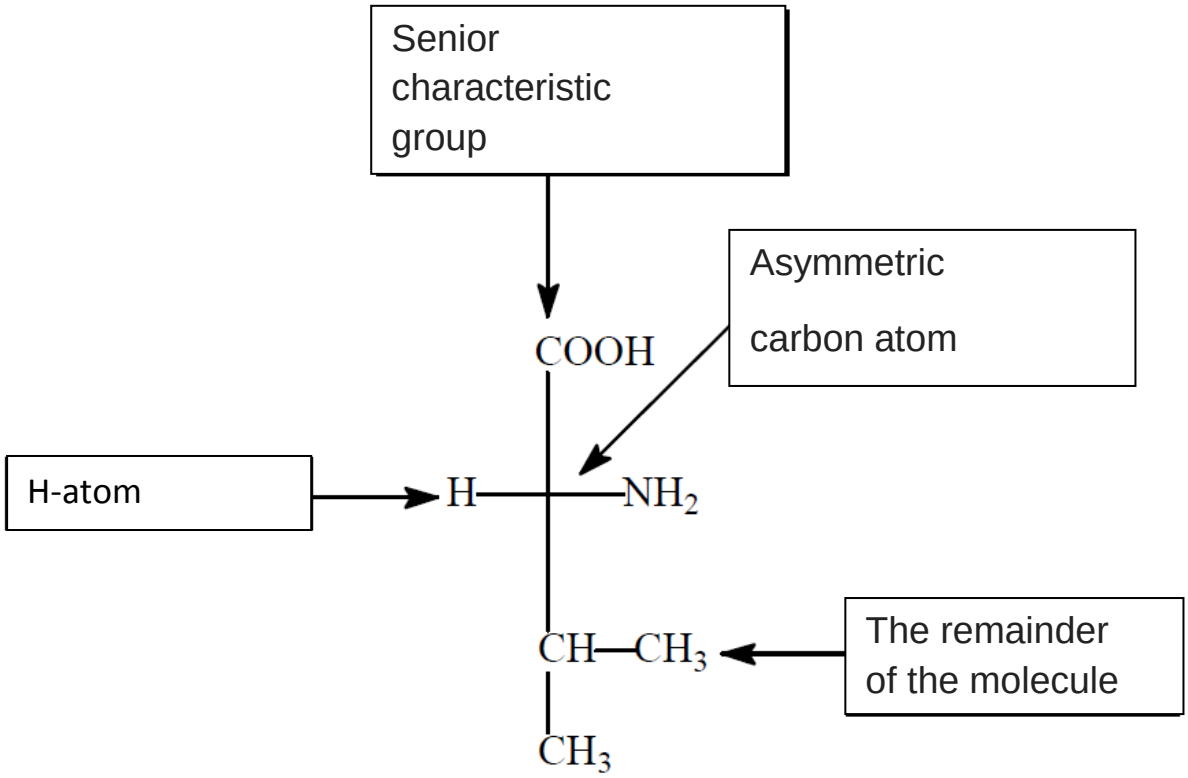
Could you explain diagrametically?

Solution:

In the form of enantiomers can exist only asymmetric (chiral) molecules, i.e., molecules having planes and centers of symmetry.
The carbon atom associated with four different substituents is called the asymmetric and performs in this connection the role of the center of chirality. Therefore, in many cases in order to answer the question, whether a given chiral molecule enough in the compound to find the atom or atoms associated with four different substituents.

For images of chiral molecules on plane widely used projection formulas Fischer, which clearly reflect the configuration of the chiral center. When writing Fischer projections are guided by certain rules. The projection represents two intersecting lines. At the top of the projection is written to the senior characteristic group (or a hydrocarbon Deputy with the lowest number when numbering in substitutive IUPAC nomenclature), on the horizontal projection lines are the hydrogen atom and the functional group (hydroxy, amino or halogen).

Chiral carbon atom is the point of intersection of vertical and horizontal lines not indicated by the symbol. At the bottom is written the remainder of the molecule.



The designation of the characteristic groups in names of organic compounds

Characteristic group (in order of falling precedence)	Prefix	Suffix
- COOH carboxy-	* -OIC acid	-carboxylic acid
- SO_3H	sulfo-	sulfonic acid
—C≡N	Cyano-	– nitrile
—C(=O)H	Oxo-	– al
C=O	oxo-	-one
- OH	hydroxy-	-ol
- SH	mercapto –	-thiol
- NH_2	amino-	-amine
- OR	alkoxy-	-
- SR,	alkylthio-	-
- Br	bromo-	-
- I	iodine-	-
- F	fluoro-	-
- Cl	chloro-	-
- NO_2	Nitro-	-