 Connections of Molecular Symmetry with mathematics.

Symmetrical operations in molecules can be observed via group theory and matrices. In our research, we focused on point groups. Specifically, we looked at C3v groups. In here, we saw that different movements of the atoms around the center atom lead to distinct patterns that is easily discernible with mathematics. The modeling of the hydrogen atom’s movement around the nitrogen atom was interpreted as an element of the symmetric group of degree 3, i.e. S3. Moreover, each element in S3 could also be perceived through the lens of linear transformations. Furthermore, we will study different point groups as well as look at the mathematical aspect of vibrations in different molecules. (Received September 11, 2019)