

# Abstract

A topological descriptor is a number representing a chemical structure in graph. When topological descriptor correlate with molecular property (chemical or physical) then topological descriptor becomes topological index.

In this thesis we calculate the degree based topological indices of line graph of super lattice structure having  $n$  layers like Randic Indices for  $\alpha = 1, 1, \frac{-1}{2}, \frac{1}{2}$ , Atom Bond Connectivity Index, Geometric Arithmetic Index, first, second and third Zagreb index, first and second Zagreb co-index, forgotten topological index, hyper Zagreb index, augmented Zagreb index, first, second and third redefined Zagreb index, reduced Zagreb index, reduced reciprocal Randic index, sum connectivity index, symmetric division index, general sum connectivity index for  $\alpha = 1, 1, \frac{-1}{2}, \frac{1}{2}$ , first and second Gourana index and first and second Gourana hyper index of line graph of super lattice structure having  $n$  layers. We also calculate numerical and graphical representations of all the said topological indices.