

VERTEX AND EDGE HYPER WIENER INDEX OF SOME NANOTUBES USING NEW DISTANCE MATRIX ALGORITHM

K. THILAKAM & R. BHUVANESWARI

PG and Research, Department of Mathematics, Seethalakshmi Ramaswami College, Thiruchirappali, Tamil Nadu, India

ABSTRACT

One of the most widely known topological descriptors is the Wiener index or (Wiener number) named after American chemist Harold Wiener in 1947. Wiener number of a connected graph G is defined as the sum of the distances between distinct pairs of vertices of G . The Hyper Wiener index is defined as $WW(G) = (\sum d^2(u,v) + \sum d(u,v))/2$, where $d(u,v)$ denotes the distance between the vertices u and v in the graph G and the summations run over all distinct pairs of vertices of G . Recently an edge version of Hyper Wiener Index was introduced by Ali Iranmanesh. Diudea was the first chemist who considered the problem of computing topological indices of nanostructures. In this paper we introduced a new algorithm to calculate the distance matrix of the given connected graph and using this we calculated edge and hyper Wiener index of some nanotubes.

KEYWORDS: Distance Sum, Nanotubes, Vertex and Edge Wiener Index, Vertex and Edge Hyper Wiener Index