

## Eccentric connectivity index of some chemical trees

### ABSTRACT

Let  $G = (V, E)$  be a simple connected molecular graph. In such a simple molecular graph, vertices represent atoms and edges represent chemical bonds, we denoted the sets of vertices and edges by  $V(G)$  and  $E(G)$ , respectively. If  $d(u, v)$  be the notation of distance between vertices  $u, v \in V(G)$  and is defined as the length of a shortest path connecting them. Then, the eccentricity connectivity index of a molecular graph  $G$  is defined as  $\zeta(G) = \sum_{v \in V(G)} \text{deg}(v) \text{ec}(v)$ , where  $\text{deg}(v)$  is degree of a vertex  $v \in V(G)$ , and is defined as the number of adjacent vertices with  $v$ .  $\text{ec}(v)$  is eccentricity of a vertex  $v \in V(G)$ , and is defined as the length of a maximal path connecting to another vertex of  $v$ . In this paper, we establish the general formulas for the eccentricity connectivity index of some classes of chemical trees.

**Keyword:** Eccentric connectivity index; Eccentricity; Chemical trees