

VL TEMPERATURE INDEX OF CERTAIN ARCHIMEDEAN LATTICE

V. Lokesha, Suvarna, Manjunath M and K. Zeba Yasmeen

Department of Studies in Mathematics,
VSK University, Ballari, Karnataka - 583105, INDIA

E-mail : v.lokesha@gmail.com, suvarnasalimath17@gmail.com,
manju3479@gmail.com, zebasif44@gmail.com

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Abstract: In *QSPR* study, a prediction about the bioactivity of chemical compounds is made on the basis of physico-chemical properties and topological indices such as Zagreb index, Harmonic index and *VL* index etc. Inspired by many degree based topological indices, we propose here a new topological index, called the *VL* temperature index $VLTI(G)$ of a molecular graph G . Our study showcases some important results on the correlation between Surface Tension, Complexity, Heavy Atomic Count, Density and Index of refraction of Butane derivatives with *VL* temperature index ($VLTI$). In this paper we compute the *VL* temperature index of line graphs of subdivision graphs of Archimedean Lattices.

Keywords and Phrases: Temperature of a vertex, *VL* temperature index, Archimedean Lattice.

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1. Introduction

The branch of mathematical chemistry which applies graph theory to mathematical modeling of chemical phenomena is known as chemical graph theory. Molecular descriptors are playing significant role in chemistry, pharmacology, etc. Topological indices have a prominent place in Molecular descriptors. There are numerous of topological descriptors that have found some applications in theoretical chemistry, especially in *QSPR* [14] [15] research.