Summary: Energies and spectrum of graphs associated to different linear operators play a significant role in molecular chemistry, polymerisation, pharmacy, computer networking and communication systems. In current article, we compute closed forms of signless Laplacian and Laplacian spectra and energies of multi-step wheel networks $W_{n,m}$. These wheel networks are useful in networking and communication, as every node is one hoop neighbour to other. We also present our results for wheel graphs as particular cases. In the end, correlation of these energies on the involved parameters $m \geq 3$ and $n$ is given graphically. Present results are the natural generalizations of the already available results in the literature.

MSC:
05C50 Graphs and linear algebra (matrices, eigenvalues, etc.)
05C90 Applications of graph theory
05C92 Chemical graph theory
68R10 Graph theory (including graph drawing) in computer science

Keywords:
Laplacian matrix; signless Laplacian matrix; spectrum; Laplacian energy; signless Laplacian energy; wheel graphs

Full Text: DOI

References: