# ON THE SPECTRA AND ENERGY OF SOME CLUSTER GRAPHS

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**Abstract**

The concept of energy of a graph was put forward by I. Gutman in 1978 [2]. The characteristic polynomial of a graph $G$ with $p$ vertices is defined as $\phi(G : \lambda) = det(\lambda I - A(G))$, where $A$ is the adjacency matrix of $G$ and $I$ is the unit matrix. The roots of the characteristic equation $\phi(G : \lambda)$, denoted by $\lambda_1, \lambda_2, \cdots, \lambda_p$ are the eigenvalues of $G$. The energy $E = E(G)$ of a graph $G$ is defined as $E(G) = \sum\limits_{i=1}^{p} |\lambda_i|$.

The graphs with large number of edges are referred as graph representations of inorganic clusters, called as Cluster graphs.

In this paper we obtain the characteristic polynomial and energy of class of cluster graphs which are also complement of complete subgraphs.

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