Abstract

The main purpose of the thesis entitled 'Hilbert Series and Stanley-Reisner rings' is to understand Stanley-Reisner rings and its applications. We study Stanley- Reisner rings in order to solve combinatorial problems associated to simplicial com- plexes with the help of commutative algebra. The thesis also includes results from a paper of Eagon-Reiner which characterizes Stanley-Reisner rings $k[\Delta]$ having linear resolutions in terms of Cohen-Macaulayness of Alexander dual $\Delta*$. The paper of Eagon-Reiner also gives explicit computations of the Betti numbers of a Stanley- Reisner ring $k[\Delta]$ under some mild conditions on Δ.