ABSTRACT

This thesis is divided into six chapters. In chapter 1, we give basic definitions and examples in categories, frames and topological groups. In chapter 2, we introduce frame-groups and give some examples. We define multiplication of two opens and multiplication of opens by points and prove a few results analogous to certain results in topological groups. In chapter 3, we construct more frame-groups from given ones. We construct subgroups and quotient groups of a given frame-group and product of two frame-groups. Chapter 4 deals with optimal frame-groups. We prove a few results to assert the power of optimal frame-groups. We see that certain results in topological groups are easily generalized to optimal frame-groups. In chapter 5, we construct a compactification of a Hausdorff frame-group, analogous to the Bohr compactification of a Hausdorff semigroup and call it the Bohr-type compactification of the frame-group. Chapter 6 deals with characters of a frame-group and the
dual of a frame-group. We prove that the dual of a frame-group is again a frame-group.

**Keywords:** Frame, frame-group, optimal frame-group, Bohr-type compactification, character, character group.