

## **ABSTRACT**

This thesis provides an exposition of the structure of fuzzy metric space and its utility in fixed point theory and analysis. Much emphasis is given on fixed points in generalized fuzzy metric spaces.

Chapter 1 includes some necessary preliminaries related to fuzzy set theory that will be needed in sequel subsequently. In this connection some concepts related to metric spaces are also included.

In Chapter 2 we study fuzzy metric space introduced by Kramosil and Micalcik [9]. Further the aspects related to fuzzy metric and fixed point theory in fuzzy metric spaces are studied in detail.

In Chapter 3, we establish some fixed point theorems in the setting of generalized fuzzy metric spaces. In this connection we are able to extend some results in fuzzy metric spaces.

In Chapter 4, we prove some fixed point theorems for Expansion type maps in the setting of generalized fuzzy metric spaces.