Title of Thesis	: **Quasi Absorbent in Lattices**
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ABSTRACT

Otto. Steinfeld introduced the notion of Quasi-absorbent in groupoid-lattices. This area has been remained untouched since 1980's. His work was little but very interesting and worth to study. Otto. Steinfeld introduced the concept of quasi-ideal in his paper "On ideal-quotients and prime ideals" (1953). Much of the Steinfeld's contribution to quasi-ideal is contained in his monograph, "Quasi-ideals in rings and semigroups" (1978). Otto. Steinfeld and Rédei in 1974 generalized concepts from groups, rings and semigroups to groupoid lattices.

In this thesis, an attempt has been made to study the quasi absorbent in lattices. we have discussed regular elements in groupoid-lattices using their absorbents, left-absorbents, right-absorbents and quasi-absorbents and generalized the results of the following authors, A.H. Clifford and G.B. Preston (1961); L. Kovacs (1956); S. Lajos (1968, 1970); J. Luh (1964) and Otto. Steinfeld (1973) and obtained that regular elements in groupoid-lattices are common generalization of regular rings and semigroups with 0. (**These results have been presented in International Congress of mathematicians, Hyderabad, India, 2010**)

We have studied the notion of Γ-absorbent in Γ-groupoid-lattices. The notion of regularity was introduced by J. Von Neumann in 1936. Otto. Steinfeld also introduced the notion of regular elements in groupoid lattices in 1973. The notion of partially ordered Γ-groupoid

lattices was introduced by Sen and Seth in 1993. Many authors, A.H. Clifford and G.B. Preston (1961), J. Luh (1963, 1964), L. Kovac (1956) and S. Lajos have characterized many results on regular rings and semigroups. We have furnished some properties of regular Γ–absorbents of a Γ–groupoid lattices and the results are published in **International J. of Math. Sci. Engg. Appls., Vol. 4 No. V, December 2010, pp. 19-24**, and **International J. of Open Problems in Computer Science and Mathematics**, **December 2010, pp. 190-200**.

Also we have discussed minimal quasi absorbent in groupoid lattices and shown that a quasi absorbent k of a groupoid lattice is a minimal quasi absorbent if and only if any of its non-zero elements generate the same left absorbent and same right absorbent. Furthermore, we have introduce the notion of semiprime absorbents in groupoid lattices and characterized minimal quasi absorbent in groupoid lattices using semiprime absorbents and the results have been published in **Shekhar (New Series) International Journal of mathematics. Volume I Issue I 2009, pp.51-56.**

Lastly we have introduced the notion of (m, n)-absorbents in groupoid lattices. The notion of (m, n)-ideal in semigroup was introduced by S. Lajos in 1963. Many authors, Robert Tilidetzke, Dharan and Dragica N. krgović have characterized on (m, n)-ideal in semigroups. Here we have extended their results in groupoid lattices and the results have been published in **International Journal of Algebra Vol. 4, no. 17-20, 2010, pp.881-887.**