Abstract

In this thesis, we define the concepts of fuzzy KU-ideal and (α, β)-fuzzy KU-ideal in a KU-algebra and investigate some of their properties, where α, β are any one of $\in$, q_u, $\in \vee q_u$, $\in \wedge q_u$ unless otherwise specified. We also introduce the notion of $(\in, \in \vee q_u)$-fuzzy KU-ideal in a KU-algebra. The concepts of implication-based fuzzy KU-ideal and implication operators in Lu-kasiewicz system of continuous-valued logic in KU-algebra are introduced. Lastly, we also define the concept of $(\overline{\alpha}, \overline{\beta})$-fuzzy KU-ideals in a KU-algebra, where $\overline{\alpha}$, $\overline{\beta}$ are any one of $\overline{\in}$, $\overline{q}_u$, $\overline{\in} \vee \overline{q}_u$, $\overline{\in} \wedge \overline{q}_u$ and investigate some of their related properties.