

**CHARACTERIZATION OF IRON PARTICLES FOR
NITRATE REDUCTION**

**Submitted to the
Faculty of Science and Technology, Uva Wellassa University
In partial fulfillment of the requirements for the
Degree of Bachelor of Technology**

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October 2013**

ABSTRACT

Chemical reduction of nitrate by metallic iron (Fe^0) was studied as a potential technology to remove nitrate from water. So it's very important for studying about characterization parameters of iron particles relevant to nitrate reduction. Recent studies have demonstrated the efficacy of zero-valent iron nanoparticles for the transformation of halogenated organic contaminants and heavy metals.

X-ray diffraction (XRD) method was used to characterize the identification of the iron particles. To measure the particle size sieve analyzing technique was used.

In nitrate reduction process by using iron particles ammonia was the end product of nitrate reduction and accounted for all nitrate transformed under our experimental conditions. Nitrate reduction efficiency mainly affected by the particle size, pH of the solution. Metallic iron particles act as catalysts in the nitrate reduction process.