

**Synthesis of Selenium Nanoparticles Using Seed Extract of
Nigella Sativa and Its some Application**

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF

Master of Science

In

Chemistry

By

Nehal Thummar

Under The supervision of

Dr. Mittal Thakkar



**Department of Chemistry
Parul Institute of Applied Sciences,
Parul University, Limda-391760, Vadodara, Gujarat, India**

ABSTRACT

In recent science, Nanotechnology is a burning feel for the research. Nanotechnology deals with the Nano particles having a size of 1-100 nm in one dimension used significantly concerning medical chemistry, atomic physics and all other known fields. Nanoparticles are use extremely due to its small size, orientation, physical properties, which are reportedly shown to change the perm once of any other materials which is in contact with this tiny particle. The use of seeds and their extracts is one of the most valuable methods which are gaining concerns due to their imperative biological benefits. The Se NPs are formed by simple mixing of Nigella Sativa seeds extract and selenious acid (H_2SeO_3) solution. This mixture was stirred which gave a dispersion of Se NPs conjugated with Nigella Sativa secondary metabolites. The work was focused to determine the synthesis, its characterization and its applications. The suspension solution confirms the formation of Se NPs showed (310 nm) by UV analysis. For detailed study of nature and shape of Se NPs X-ray diffraction, SEM and TEM analysis will be carried out in future. Se NPs exhibit efficient methylene blue (MB) dye degradation in the presence of sunlight. The present results support the advantages of green method for the production of Se NPs having potential activities.

