Research Objectives and Thesis outline
3. Research Objectives and thesis outline

The continuous utilization, of ever increasing volume of chitinous-biological-industrial-solid waste, is necessary to maintain carbon and nitrogen ratio of the environment to sustain the biodiversity. Therefore, this study involves purification and characterization of thermostable chitinases produced by an isolated microorganism and *O. xanthineolytica* NCIM 2839 and its applications with the following objectives:

- Isolation and identification of thermophilic chitinase producing microorganisms.
- Adaptation of *O. xanthineolytica* NCIM 2839 for thermophilic chitinases production.
- Optimization of parameters such as pH, and temperature for production of chitinase.
- Optimization of medium components for maximum chitinase production.
- Purification of thermophilic chitinase from *O. xanthineolytica* NCIM 2839 and *B. licheniformis* strain JS.
- Elucidation of proposed pathway for chitin degradation
- Production of chitinase by solid state fermentation.
- Study the antifungal activity of chitinase.
- Protoplast formation of *A. niger* by using *O. xanthineolytica* chitinases.
- Use of chitinases for the production of single cell protein (SCP).