3. Aim & Scope of study

The proposed study will facilitate to establish the role of Bio-silver nanoparticles (*Ganoderma lucidum*) and transdermal film (Chitosan & Sacchachitosan) in the diabetic wound healing.

3.1 Objectives

- To estimate the mycochemical constituents present in the medicinal mushroom, *Ganoderma lucidum*.
- To explicate the biological synthesis of silver nanoparticles from *Ganoderma lucidum* along with optimization and characterization of the nanoparticles.
- To elucidate the physiochemical properties of chitosan and sacchachitosan isolated from prawn waste and mushroom fruiting body.
- To establish the preparation of the transdermal film with the following biopolymers such as chitosan and sacchachitosan along with gelatin and bio-silver nanoparticles.
- To explore the physical, chemical and biological properties of the transdermal film.
- To expand and equate the efficacy of chitosan-gelatin and sacchachitosan-gelatin transdermal film.
- To enumerate the *In vitro* potentiality of the samples (*G. lucidum*, bio-silver nanoparticles, chitosan, sacchachitosan, chitosan-gelatin and sacchachitosan-gelatin transdermal film) upon antioxidants, anti-inflammatory, platelet aggregation, angiogenesis, anti-microbial, cytotoxicity, genotoxicity and wound healing activity.
- To examine *in vivo* toxicity effect of sacchachitosan-gelatin transdermal film based on OECD guidelines.
- To evaluate the diabetic wound healing potential of the unique dressing material (sacchachitosan transdermal film) against excision animal models.