
Registration Seminar

Seminar Title	: Fine Micro and Nanostructural architectural Adaptations in the Wings of Hemipteran Insects
Speaker	: Deepak Kumar Panda (Rollno : 522ls1006)
Supervisor	: Prof. Monalisa Mishra
Venue	: LS Seminar Room
Date and Time	: 14 May 2024 (10.30AM)
Abstract	: The resistance to antibiotics has led to the discovery of innovative technology for developing surfaces and materials able to repel or kill microorganisms present on the external surface of the daily used materials, starting from biomedical tools, the surface of tables, cellphones, packaged food items etc. Recently, the physical killing of bacteria has been preferred over the chemical killing of bacteria. Contact-based killing has been the leading method among all physical-based killing of bacteria. These methods have been inspired by nature, primarily from insect body parts. Many insects known to possess bactericidal surfaces that can kill microbes upon contact. Initial prevention of adhesion and growth of bacteria decreases the chances of biofilm formation. The efficacy of the use of antibiotic against biofilm is only limited to the upper layer of the film and less effect on the bottom layer bacteria. Such inability of the antibiotics to enter the bottom layer and impose effect on biofilm can help bacteria to generate the resistance against antibiotics over long periods of application. Therefore, one of the solutions to control the biofilm formation is prevention of adhesion and colonisation of microbes over surface by killing of bacteria upon contact. Insect wings are well adapted they resist microbial contamination. The roughness of the surface, chemical composition and nano-sculpture of the wing determines the extent of contact-based killing. Hemipteran wings are well adapted to resist the adverse conditions. In this regards only few studies focused on the wing adaptation of Hemiptera. The current study aims to study the wing adaptation of member of Cicadellidae, Fulgoridae, Pentatomidae, Membracoidae and Cercopoidae family.