

## **DST FIST Grant (Level 1)**

**The Department of Biotechnology & Bioinformatics, Sambalpur University has awarded with DST-FIST (Level 1) - 2017 “To Strengthen the Post Graduate Teaching and Research Facilities in the Department” with a financial support of Rs. 68.0 Lakh. Under DST FIST grant the Department has envision to strengthen facilities on following aspects.**

***(a) Experimental facilities to be created from the proposed proposal:***

The state of the art experimental facilities that will be created from the proposed proposals for the smooth conduct of research works of students, research scholars and faculties includes (i) extraction of phytochemicals from indigenous medicinal plants and fractionation, (ii) plant tissue culture laboratory, (iii) water purification system, (iv) 2D proteomics laboratory and (v) Bioinformatics laboratory.

***(b) UG/PG programs to be supported from the proposed proposal:***

Various programs of the Department such as (i) M.Sc Biotechnology, (ii) M.Sc Bioinformatics, (iii) M.Phil Biotechnology, (iv) Ph.D in Biotechnology and (v) Ph.D in Bioinformatics will be supported by the experimental facilities to be created from the proposed proposal.

***(c) Research themes to be enabled from the proposed proposal:***

Title: Formulation of natural and synthetic products and experimental evaluation for therapeutic application

**Objectives:**

1. Extraction of phytochemicals from plant materials, activity guided fractionation of crude extract, purification and structural elucidation of bioactive molecules pertaining to formulation of standardized, efficacious and safe herbal products for therapeutic uses.
2. Strategic design of derivatives through modification of functional groups in the scaffold of bioactive molecules and screening of promising derivatives with better therapeutic efficacy based on computer aided drug design (CADD) techniques, followed by chemical synthesis.
3. Comprehensive preclinical evaluation (including biochemical, biophysical, cellular, computational analyses, and animal model studies) and toxicity profiling (based on histopathological, hematological and behavioral study) of the products in its crude form, partially purified form, pure form and in conjugated form.
4. To prepare a stud book of medicinal plants regarding the indigenous knowledge of secondary metabolites and their usage pattern for the treatment of various diseases to promote its cultivation and conservation pertaining to socio-economic development of local communities.