

# IIT-I gets two patents for novel inventions

**ONE PATENT** for developing cost effective drug for leukemia and another for designing Space Exploration System and Method

OUR STAFF REPORTER  
Indore

Indian Institute of Technology Indore has been granted two patents by Indian Patent Office for its novel inventions.

One patent has been secured by Department of Bioscience and Biomedical Engineering faculty member Prof Avinash Sonawane, and another by Dr Anirban Sengupta of Com-



puter Science Department.

Sonawane got patent for his novel research on "The development of asparaginase drug for the treat-

ment of blood cancer".

This new asparaginase drug (M-ASPAR) using protein engineering approach to treat Acute Lymphocyt-

ic Leukemia, a type of blood cancer.

Recently, Prof Sonawane also received funding from Biotechnology Industry Research Assistance Council (BIRAC), DBT, Government of India under Early Translational Accelerator (ETA) program to carry out Phase I and II Clinical trials of M-ASPAR jointly with the Advanced Centre for Treatment, Research & Education in Cancer, Tata

Memorial Centre (ACTREC, TMC), Mumbai, and a Mumbai based Epygen Biotech Pvt. Ltd, a Biopharmaceutical company based in Navi Mumbai.

"Despite being in the World Health Organisation's list of essential medicines, access to good quality asparaginase in India and several other Asian, African and South American countries has been a problem." **CONTD. ON P8**

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Approximately 25,000 new cases of Acute Lymphocytic Leukemia are diagnosed in India each year," said Sonawane. The repeated administration of asparaginase currently in use for the treatment of Acute Lymphocytic Leukemia patients causes serious side effects such as Acute lymphocytic leukemiaergic reactions, neurotoxicity, immunogenicity, hypersensitivity and toxicity to the pancreas, liver and spleen among other organs. Moreover, due to the immunogenic nature of current asparaginase formulations, the treatment of relapse Acute Lymphocytic Leukemia is significantly compromised. For these reasons, there is a global search for asparaginase variants with better safety profile. Similarly, Sengupta got patent for invention on "Design Space Exploration System and Method thereof using a Bacterial Foraging Optimization Mechanism" that is useful for designing digital chips of camera systems and mobile devices. The invention is several magnitudes efficient than other state of the art inventions used for this purpose. The invention is capable to enhance the speed of the chips and reduce power using biological chemotaxis and elimination-dispersal process. The present invention relates to design space exploration (DSE), and more particularly to method and system for design space exploration in high level synthesis using bacterial foraging optimization mechanism for designing or obtaining an application-specific processor (ASP) or Hardware Accelerator or Intellectual Property Core. Overall, 75 patents have been filled from the inception of the Institute and total 4 patents have been granted by Indian Patent Office.