

The Golden Spiral: Connecting Teaching, Research and Innovation

Prof. (Dr.) B. Ravi is the Institute Chair Professor of Mechanical Engineering, and head of E-Foundry and OrthoCAD Labs at IIT Bombay. In his brief visit to the LNM IIT, Jaipur, he addressed the faculty and students on the 5th of November, 2013 in LT 10 from 5 pm to 6:30 pm. He spoke about how the past two decades of his life resulted in notable advancements in the area of metal casting and medical devices. He explained the mantra behind the success was essentially linking teaching, research, and industrial innovation, which he called “The Golden Spiral”. He urged the faculty to visit and observe industries, find examples which could be discussed in the class and inspire students to come up with innovative solutions.

He awakened the students by bringing out the miserable plight of the Indian job market and emphasized the importance on becoming a job-generator than a job-seeker. He pointed out that Indians are good at services and not in manufacturing or product development. He believes that academic institutions can help to a large extent by generating innovative ideas and solutions which could be implemented through industries and thereby helping the cause. As an example he talked about a software E-Foundry which now has users from all around the globe. The idea behind was to make expensive technology accessible to the small and medium industries who could not afford a similar software. Now the software could be accessed free of cost through their website and at the same time available as a complete package for a price. In another example he showed how he brought the cost of an artificial knee joint down from Rs. 500,000 to Rs. 90,000. Through further examples, he proved how a lab could be incorporated on a chip and a factory could be setup on a table. He said that the key point is to identify what the industry and people want.

He also brought to notice about the Teacher Training Program organized in IISc, Bangalore and showed interest in doing something similar at the LNM IIT. He gave examples on how he incorporated innovative ideas while teaching a subject. For instance, when he had taken a course on Medical Device Innovation the students were asked to learn from home and discuss what they learnt later in the class (i.e. the reversal of home-work class-work concept). The LNM IIT also got the pleasure of taking him on a tour of Jaipur.