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The **9th** lecture of the  
Innovation and Technology Enterprise  
Lecture Series

## Medical Device Innovation: Opportunities, Challenges and Best Practices

by

**Prof. B. Ravi**

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PI, Biomedical Engineering & Technology  
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Indian Institute of Technology Bombay, Mumbai

On

**Wednesday, 14 Oct 2020**  
**Time: 4 pm – 6 pm**

Lecture is open to all.  
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THE SESSION WILL BE HELD ON A ONLINE  
PLATFORM

**Prof. B. Ravi**



**Abstract:**

There is immense potential to solve unmet needs of society by exploring new technologies, developing appropriate solutions and offering them to end-users through start-up companies. This can lead to social impact through affordable solutions as well as job opportunities. Innovators can leverage emerging technology drivers like 3D printing, smart sensors, artificial intelligence and robotics. There are however, several 'valleys of death' between ideation, invention, innovation and impaction. These can be overcome by team members having complementary backgrounds and using a systematic process from concept to commercialization. A conducive eco-system to identify, train, mentor and support the aspiring innovators is equally essential and helpful.

We will illustrate the innovation process with real-life stories of multi-disciplinary teams who created novel and high-quality yet affordable medical devices, such as smart stethoscope (for contact-less auscultation of COVID patients). It involves unmet need identification by end-users (doctors in the case of healthcare), focused research by scientists, product development by engineers and commercialization by entrepreneurs. We will highlight key challenges and the best practices to effectively and efficiently translate research work into real-life application. We will also discuss the critical role of various resources (infrastructure, procedures, mentors, and culture) useful for aspiring innovators and entrepreneurs in their journey.

**About the speaker:** Prof. B. Ravi is an Institute Chair Professor of Mechanical Engineering at IIT Bombay. He is well known for his work in metal casting through AutoCAST, E-Foundry and SMART Foundry projects. In 2014 he set up BETIC – Biomedical Engineering & Technology Innovation Centre, whose team members developed 50 and patented medical devices, incubated 15 startup companies, licensed 5 products to industry, and won several prestigious awards. Since 2019, he is heading DS School of Entrepreneurship, where over 1000 students have been trained and mentored in entrepreneurship during the last five years, leading to 25 start-ups. As a member of governing or advisory councils of several institutes and expert committees of various government agencies, Prof. Ravi also contributes to project reviews, policies and practices related to translational research, product innovation and entrepreneurship.

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