**Format: P3012/8**

**Report on "A One Day Workshop on, Research, Education, Innovation and Entrepreneurship (REINVENT)"**

**Organized by** : Research & Development Cell
**Event name** : REINVENT
**Name of the external** : Prof. B. Ravi i Director of NIT Karnataka at Surathkal
**Designation** : Professor
**Topic** : Research in Education, Innovation and Entrepreneurship
**Venue** : Ground floor Conference Hall, Visvesvaraya Bhavan
**Dates & Time** : 23-03-2024 (10:30AM to 4:00PM)
**Conducted for** : Doctorates
**No. of Faculty Attended** 40

| S. No | Branch | No of Faculty Attended |
|---|---|---|
| 1 | CIVIL | 4 |
| 2 | EEE | 4 |
| 3 | MECH | 6 |
| 4 | ECE | 7 |
| 5 | CSE | 5 |
| 6 | IT&MCA | 3 |
| 8 | AIML | 3 |
| 9 | H&BS | 8 |
| Total No of Faculty Attended | | 40 |

**Profile of the Speaker**

Prof. B. Ravi is the Director of National Institute of Technology Karnataka (NITK) at Surathkal, Mangalore since June 2023. He is a distinguished alumnus of NIT Rourkela, where he completed Bachelors in Mechanical Engineering, followed by Masters and PhD at IISc Bangalore, and joined as faculty at IIT Bombay in 1992. There he founded several labs including E-Foundry, Biomedical Engineering & Technology Innovation Centre (BETIC), BIRAC Early Technology Accelerator, and ICMR-DHR Centre of Excellence for Medical Devices. During 2019-2022, he headed Desai Sethi School of Entrepreneurship. He is Fellow of the Indian National Academy of Engineering, Fellow of Institution of Engineers (India) and Abdul Kalam Technology Innovation National Fellow.Prof. B. Ravi is well known for inter-disciplinary multi-institute translational research leading to advanced yet affordable products, startup companies and social impact. His

AutoCAST software (developed with 3D Foundry Tech & CSIR-NIIST) is used in 200+ foundries and labs to simulate and improve casting quality. His BETIC team developed and patented 65+ novel medical devices, incubated 20 startup companies and licensed 15 products to local industry. These benefitted thousands of patients. OrthoCAD project (with NFTDC) led to tumour knee prosthesis for children affected by bone cancer. Cloud-based E-Foundry has over 10,000 members who simulated nearly 30,000 castings.

Prof. Ravi guided nearly 100 PhD and Masters students. He shared the relevant knowledge through 250+ technical papers, 400+ invited or conference talks (including AIR, TEDx and TED Med), and 75 training programs benefiting thousands of teachers, students and industry professionals. His books on Metal Casting, and Medical Device Innovation are widely appreciated. His draft manufacturing policy received an award from former Prime Minister AB Vajpayee. BETIC and E-foundry spawned similar cells in other institutes. His team members won BIRAC Biotech Ignition Grant (20 times), DST India Innovation Growth Program award (thrice), Google Impact, and other awards. As a member of governing councils of CMTI Bangalore, KIHT Visakhapatnam, LNMIIT Jaipur, SCTIMST Trivandrum and others, Prof. Ravi guides their vision and strategy. Several government agencies (AICTE, BIRAC, BIS, DBT, DST, ICMR, MHRD/MOE, MeitY, MOCI, NITI Aayog) utilize his experience for project reviews and policies. In the present tenure, he envisions transforming NITK into a model institute of global excellence and local relevance by connecting research, education, innovation and entrepreneurship.

**Report**

A one-day workshop is arranged by ACET-R&D Cell on 23rd March 2024 (Saturday) from 10.30 AM to 4:00 PM at Visvesvaraya Bhavan, Ground Floor Conference Hall. The one-day workshop on Research, Education, Innovation, and Entrepreneurship (REINVENT) aimed to explore the intersections of these vital elements in driving societal progress and economic growth. Hosted in [Location], the workshop brought together academics, researchers, entrepreneurs, and policymakers to share insights, discuss challenges, and brainstorm strategies to foster a culture of innovation and entrepreneurship within educational and research institutions. The workshop commenced with an insightful discussion on the symbiotic relationship between research and education. Participants emphasized the importance of integrating research into educational curricula to cultivate critical thinking, problem-solving skills, and a culture of inquiry among

students. Furthermore, the need for academic institutions to incentivize and support faculty members' engagement in research activities was highlighted as a crucial factor in nurturing a vibrant research ecosystem.

The workshop deliberated on innovative pedagogical approaches and teaching methodologies aimed at fostering creativity, entrepreneurship, and interdisciplinary collaboration among students. Examples of successful initiatives, such as project-based learning, experiential learning, and maker spaces within educational institutions, were shared, emphasizing the role of educators in inspiring and empowering the next generation of innovators. A significant portion of the workshop was dedicated to exploring ways to instill an entrepreneurial mindset among students, faculty, and researchers. Discussions revolved around the importance of cultivating traits such as resilience, adaptability, and risk-taking, essential for entrepreneurial success. Participants also emphasized the role of mentorship, networking opportunities, and access to funding in nurturing aspiring entrepreneurs and translating innovative ideas into viable ventures. Participants engaged in candid discussions about the challenges and barriers hindering the integration of research, education, innovation, and entrepreneurship within academic institutions. Common challenges identified included bureaucratic hurdles, funding constraints, lack of collaboration opportunities, and the disconnect between academia and industry. Strategies to address these challenges, including streamlining administrative processes, fostering interdisciplinary collaborations, and strengthening industry-academia partnerships, were proposed and discussed.

Participants advocated for the development of interdisciplinary research programs and the integration of research experiences into undergraduate and graduate curricula. Recommendations included establishing research mentorship programs, providing incentives for faculty engagement in research, and creating dedicated research funding streams within educational institutions. The workshop emphasized the importance of creating an ecosystem that supports innovation and entrepreneurship within academic institutions. Recommendations included establishing entrepreneurship centers or incubators, offering entrepreneurship courses and workshops, and providing seed funding and mentorship support for student-led startups. Additionally, participants underscored the need for fostering a culture of collaboration and knowledge sharing between academia, industry, and government stakeholders. Participants stressed the importance of strengthening partnerships between academic institutions and industry stakeholders to bridge the gap between theory and practice. Recommendations included establishing industry advisory

boards, facilitating technology transfer and commercialization initiatives, and promoting collaborative research projects that address real-world challenges.

The one-day workshop on REINVENT provided a valuable platform for stakeholders from academia, industry, and government to engage in meaningful discussions, share best practices, and identify actionable strategies to promote research, education, innovation, and entrepreneurship. Moving forward, it is imperative for educational institutions to embrace a holistic approach that integrates these elements seamlessly, thereby empowering individuals to drive positive change and contribute to economic growth and societal development. Through collaborative efforts and sustained commitment, we can cultivate a culture of innovation and entrepreneurship that unleashes the full potential of our academic communities and fosters a spirit of creativity, resilience, and lifelong learning among future generations.

**Overall Feedback from Faculty**

Faculty provided feedback to the resource person about Research, Innovations and Entrepreneurship and inter relations among them. The knowledge of Prof. B. Ravi on the subject matter is quite impressive and his grasp of the particulars of the research process was evident throughout the presentation. He excelled in engaging and interacting with participants. The entire day experience was truly valuable. Prof. B. Ravi sir explained quality of research and converting into patent and then commercial model very clearly. Given a suggestion to all the participants should be publish related research work in quality journals and patents for getting funding proposal acceptance. Finally, given important tips and tricks to starts start-ups and Entrepreneurship activities. All the participants got a clear idea and more confident to develop prototypes and then finally market product. Once again thank you sir for sharing your expertise.

**Remarks from Resource Person**

Prof. Ravi was satisfied with the well-organized event and interaction from the R&D department. He was also enthusiastic about the faculty's attendance and interest in knowing things in Education, Research, Innovations and Entrepreneurship.

**Photos**

**Budget:**

| S.no | Budget Head | Amount |
|---|---|---|
| 1. | Honorarium to the Expert(s) | 10,000/- |
| 2. | Participants Tea & Snacks | 500/- |
| **Total Amount** | | 10,500/- |

Coordinator

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