Dr. B.K. Misra, Director- IIT Goa

FROM THE DESK OF THE DIRECTOR

Excerpt from an Interview with Prof. B. K. Mishra, Director, IIT Goa

As the Founding Director, what is your vision for the institute & how do you propose to shape it in near future?

My vision for IIT Goa is simply that of creating a premier institution with an unparalleled academic environment where excellence and relevance of academic pursuits go hand in hand. I have asked the student committees to perform in such a way that when outsiders look at IIT Goa students, they must notice a significant difference and immediately perceive their uniqueness as a student body. While recruiting faculty, I ensure that we have the finest scholars befitting the stature of an IIT. I also ask faculty members to introduce innovative teaching and research methodologies so that our students get the best learning experience possible.

I have also drawn up a detailed plan about the possibilities to initiate various research activities and attract student interns to IIT Goa. This will be the first step for our institute in terms of R&D activities. We also plan to take up consultation assignments and are already in talks with the Environmen-

tal Panel of the State Government. On the "outreach" front, we are sensitizing our neighbouring industries about our expertise and beginning to advise them on issues relating to their particular areas. With respect to students' outreach, I requested our student representatives to organize talks in local schools and share their knowledge about JEE as well as academic and student-life experiences at an IIT. Our job is to make young Goan students more ambitious by learning about our students' backgrounds and experiences, thereby motivating them to take their future goals seriously.

Being the Founding Director of IIT Goa, could you please share your experiences of managing a new IIT?

At the outset, the primary issue faced by us is that our campus is being hosted by GEC. At the moment, my main aim is to provide a state of the art learning experience to our students, at par with the other IITs. In this regard, the GEC authorities and their staff are extending to us their best possible cooperation. Another challenge is

posed by the distance between our current location at Farmagudi and the city of Ponda, which offers all urban amenities. We are trying to resolve this issue by providing a shuttle service between Farmagudi and Ponda. We are requesting some of the best professors who have recently superannuated from other IITs to be a part of our teaching community. Once they join IIT Goa, we hope to provide them good accommodation and help them settle down in our campus comfortably.

According to you, what kind of changes would have taken place in the institute by the year 2020, when the first batch graduates from IIT Goa?

Because of our existing arrangements and other constraints, the first batch of IIT Goa will most likely graduate from the GEC campus. However, the second batch will see the new campus with a capacity to accommodate around 1200 students. The new campus will host a main academic and administration area, along with student hostels and faculty and staff houses. While the campus will be ready by 2021, our 2016 batch will definitely see the new hostel at the GEC campus. It is a beautifully planned hostel and will be ready by June 2018. We are also planning an additional academic area to house our research equipment and facilities.

At present, IIT Goa is temporarily housed at the campus of Goa Engineering College (GEC). Could you please elaborate on the future plans for the new IIT campus?

The permanent campus is most likely to be built in an area of about 320 acres of land away from the coast. The main reason I agreed to this site is due to its proximity to a water dam and a United Nations Biodiversity Heritage Park. It is a picturesque place where we will get plenty of water and other amenities without depending on major urban centers. For safety reasons, I agreed to this site which is not too close the beaches. We have already shortlisted a panel of architects from all over India to work on the site

plans. As soon as they are ready, we will go ahead with the construction of a campus that will be self-contained in all possible ways.

Could you throw some light on the formation of the institution's placement cell?

Placement is an important component of any Institute. I see that students nowadays are career-oriented from day one and rightfully so. They have all put in a lot of effort in securing a place in an IIT. There are companies which are willing to come to IIT Goa. Surely, next year onwards we will seriously consider having a placement cell established with different industries. In its absence, students are encouraged to go for internships to gain experience. Also, students don't have to think only in terms of jobs, but also consider the idea of startups to create employment for others. For this reason, I plan to invite colleagues from other IITs to share their experiences so that we can get ideas and begin on an innovative note.

At the IITs, the faculty is required to give their best output in the areas of teaching and research. What would be your advice to the young faculty members who have joined recently?

After returning from the United States, I started to teach in IIT Kanpur and realized that it is somewhat challenging to adjust to the academic demands. It is particularly challenging for a young and fresh faculty member to start teaching undergraduates in the IIT system. For this reason, we request experienced faculty members to join IIT Goa and share their teaching experience with their younger colleagues. I would advise the younger faculty members to attend classes of senior professors, so that they can improve their teaching skills. Furthermore, I will emphasize on conducting summer courses here in IIT Goa for our students.

What is your advice to people, who desire to join this institute, either as a student or as a faculty member?

I foresee IIT Goa to be quite different from other IITs in many respects. An IIT in Goa is already creating a brand for itself. Many academics and colleagues from around the world are interested in coming here. I would also invite professors from other IITs to IIT Goa to teach a topic or two. I am planning to formulate courses that are completely inter-disciplinary and can be taught in short 15-day sessions. In this context, I must say that the Fractal Academic Program developed by IIT Hyderabad is the most appropriate model to adopt. This concept of fractal courses is currently gaining popularity. Many professors will even be interested in coming on sabbatical for longer periods as well.

As you are aware, the field of Artificial Intelligence is currently blooming. However, in the process, the world is losing humanitarian values by discarding concerns, viz. poverty, hunger, health hazards, etc. What are your views in this regard and what kind of human culture you would like to foster at this institution?

All of us must realize that we are here in an IIT at a huge cost to the general public. Therefore, we must do something in return for the local community and the society at large. Community outreach is a very important activity for any educational institute. So the question is how do you connect with the society? There are local school students who are interested in meeting our students, as they want to know what it is like to study in an IIT. Our students will be sought after in areas like energy, water, and environment, where new technologies are coming up. Social problems like poverty, hunger, unemployment and health hazards can be addressed through technology and innovative thinking. So no matter what research or teaching one does, there has to be a component of relevance or applicability in the outcome. Therefore, our aim should always be to remain relevant in our academic pursuits and be useful to society through our endeavors.

NATIONAL UNITY DAY

Gurukul Varta Editorial Team

VISHAL JHA

On 31st October 2017, IIT Goa celebrated the National Unity Day. This day marked the birth anniversary of Sardar Vallabhbhai Patel, the Ironman of India. We paid homage to this great man who is responsible for stringing together the India we know today. Had it not been for his determination and strong resolve to unite the nation, India would have been split into numerous princely states.

The celebrations commenced with a documentary on the life of Sardar Patel. I feel privileged that I hosted this event. The documentary was followed by an Elocution competition on the topic 'Sardar Patel: What do his ideas mean in the present generation?'.

After this, Prof. Amaldev Manuel shared his views about the importance of unity in the present world. He drew a wonderful analogy between the European Union and India and how the 'states' were pulling out of the EU and how there was general turmoil all over the world with referendums related to splitting of countries. This emphasizes how important it is to have a day dedicated to the celebration of the Unity of our nation. Everyone present felt proud of being an Indian and I wouldn't be speaking only for myself when I say that they would go to great lengths to preserve the Unity of our country.

Let us truly understand the motive of this celebration and work towards a united and progressive India.

PARTICIPATION IN WAVES

HIMALI GOEL

Waves, the annual cultural festival of BITS Goa, is a three-day long astounding bonanza packed with excitement. The fest includes a series of spectacular events showcasing talents of all kinds including dance, drama, music and much more. The events, besides being golden opportunities for talented performers, are also a visual treat to the audience.

IIT Goa had the privilege of participating in Waves for the first time in 2017. Students of our college took part in various events of dance, drama, photography, stand-up comedy, quizzing, debating, poetry, fine arts, and music. Our institute presented two group performances, one each in the field of dance and drama. The group dance was choreographed by the Cultural Secretary, Ishan Singhal. The street play was directed by the Drama Secretary, Abhay Kajania. Among individual participants, Ashish Kumar brought glory to our institute by securing the

Ashish Kumar: Poetry Competition (Irshaad)

first place in Irshaad, a Hindi poetry competition.

Kudos to all our classmates for their sincere efforts and participation! We hope to participate in many more such events, learn from our experiences and bring laurels to our college in the future.

56th GOA LIBERATION DAY

NEHA SHAH

56th Goa Liberation Day was celebrated on 19th December 2017 in IIT Goa campus with lot of enthusiasm and excitement. To mark this momentous occasion, all the professors and staff of IIT Goa assembled in our conference room for the event. Prof. Rodney Fernandes, Dean (AP) and a native of Goa, gave an excellent speech describing the rich history of Goa as well as the struggles of the Goan people leading up to the liberation day on 19th Dec 1961. He also detailed the other important events which have shaped the history of Goa. This historic day was also commemorated by the launch of new IIT Goa website by our esteemed Director, Prof. B. K. Mishra.

SEMINARS AND WORK-SHOPS @ IIT GOA

IoT AND CYBERSECURITY WORKSHOP

IoT Workshop was organized by IoT India on 5th November 2017 at IIT Goa. Mr. Manikanta Gupta and Ms. Kavya Dommeti from iB IoT Makers came to the institute to explain the meaning of IoT-Internet of things. They described how IoT is going to be at the forefront of industrial technology and how students can approach IoT as a profession in future.

A Hackers 101 Workshop was also held at IIT Goa on the same day by the team Cybereye which is the cybersecurity arm of the iB Hubs. The workshop was aimed at introducing the Hacker culture, Cyber Kill Chain methodology, along with the techniques, tools, and procedures of hacking. The objective was to empower students to plan and build their career in the field of Cybersecurity.

Mr. Abhinav D. and Mr. Ram Ganesh from Cybereye gave an overview of the hacking activities and clarified the difference between ethical and unethical hacking and encouraged students to become ethical hackers.

TALK ON NARCOTICS AND DRUG ADDICTION

On September 20, 2017, IIT GOA in association with Central Bureau of Narcotics, presented a talk on narcotics and drug addiction to provide general information about drugs (mainly narcotics) and drug abuse. The main purpose of this talk was to make students aware of the harmful effects of drug addiction because the youth can be its worst victims. Dr. A. Venkadesh Babu, IRS, Assistant Narcotics Commissioner, Central Bureau of Narcotics (Chennai) was the speaker for this event. He explained to the students how drug addiction can affect students physically and mentally. He discussed remedial measures for addiction while telling us about some of his official tours to set up an interactive environment with the students. It was a commendable talk, and all the students appreciated it.

ANIMAL BITES

IIT Goa campus is situated in a dense, green surrounding full of characteristic flora and fauna of the region. However, this beautiful environment also brings with it some potential danger emanating from harmful bites from different types of creatures. In order to create awareness among the residents of the campus, a seminar was organized on the topic "Animal Bites" by Dr. Ugam Tari on 06 January 2018 Dr. Tari, in his inimitable style, explained in detail about various kinds of animal bites as well as discussed, the proper first response by the victim and others. The knowledge which the audience gained during this seminar will certainly help them to face such fateful circumstances in appropriate manner.

INTERNSHIP CELL
NEHA SHAH

Internship cell of IIT Goa has been set up under the guidance of Prof. Brijesh Eshpuniyani (Associate Professor, Mechanical Engineering) with an aim to facilitate interaction of students with Indian Science and Technology establishments and organize internships in the same. It provides a portal for external students who seek an internship with faculties at IIT Goa. Currently it consists of four student representatives, one from each branch Computer Science, Electrical Engineering, Mechanical Engineering and General Secretary of Academic Affairs.

IoT Workshop held at IIT Goa

RECENT FACULTY APPOINTMENTS

Dr. Sanand Dilip Amita Athalye
(Assistant Professor)
Department of Electrical Engineering
Research Interests:Algebraic Riccati Equations and Inequalities, Applied linear algebra, Cyber physical Systems, Switched linear systems, Networked control

Dr. Sarang Pendharker
(Assistant Professor)
Department of Electrical Engineering
Research Interests: Microwave photonics; Optical super-resolution microscopy; Electromagnetic Wave Theory.

Dr. Nida Sajid
(Assistant Professor)
Department of Humanities and Social Sciences
Research Interests: Postcolonial Literature; Transnational Intellectual History; Global Eighteenth Century; Gender and Material Culture; Translation Studies and Modern Indian Literature

Dr. Lok Pati Tripathi
(Assistant Professor)
Department of Mathematics
Research Interests: Numerical Analysis, Computational Finance

Dr. Rajesh S. Prabhu Gaonkar
Professor (on Deputation)
Department of Mechanical Engineering
Research Interests: Fuzzy Set Applications in Reliability Engineering, Fuzzy Set Applications in Maintenance Engineering, Transportation Models and its Variants, Multi-Attribute Decision Making.

Dr. Saumya Bajpai
(Assistant Professor)
Department of Mathematics
Research Interests: Numerical Analysis, Finite Element Methods, Control and Stabilization.

RECENT PUBLICATIONS

1. T S Rathore, **A Systematic Method for Finding the Input Impedance of Two-Terminal Networks**, IETE J of Education, 2017, DOI: 10.1080/09747338.2017.1404498

2. T S Rathore, **Synthesis of Networks from Their Loop and Node Analysis Based Matrices**, 2017, DOI: 10.1080/09747338.2017.1360157

3. T S Rathore & J L Rathore, **Star ↔ Delta Transformation in the Presence of Sources, 2017**, DOI: 10.1080/09747338.2017.1384331

4. T S Rathore, **Circuit Theorems – Scope and Limitations (Review paper)**, Int. J. of Technology, A K G Engineering College, Ghaziabad, India, vol 8, no. 2, July-Dec 2017 (Best paper in the issue)

5. T S Rathore, **Design of Digital to Analog Converters with Arbitrary Radix**, special issue of Int J on Circuits and Systems on 'Circuit Principles and Circuit Design' from South Korea, Feb 2018.

6. Sanchit Khatavkar,* Kulasekaran Muniappan, Chinna V. Kannan, Vijay Kumar, Krishnamachari L. Narsimhan, Pradeep R. Nair, Juzer M. Vasi, Miguel A. Contreras, Maikel F. A. M. van Hest, and Brij M. Arora*, **Measurement of Relaxation Time of Excess Carriers in Si and CIGS Solar Cells by Modulated Electroluminescence Technique**, 2017, DOI: 10.1002/pssa.201700267

AWARD RECEIVED BY PROF. RODNEY FERNANDES

Prof. Rodney Fernandes, Dean (AP) and Professor, Dept. of Chemistry, IIT Goa received the special distinction of delivering 4th Prof. S. C. Bhattacharya Memorial Lecture on 8th December 2017 on account of his significant contribution to the field of organic synthesis. This annual lecture was hosted by Prof. S. K. Paknikar Research and Educational Trust, Goa University at EDC Hall, Panaji, Goa. The lecture was attended by the students and Faculty of Goa university as well as representatives from many chemical companies based in Goa and was well appreciated by everyone alike.

INFRA-NEWS

New hostel construction progress as of 25th Feb 2017

CONSTRUCTION FOR THE NEW HOSTEL STARTED

Construction for the new IIT Goa hostel was started by the SCON construction agency at Goa Engineering College on 28 September 2017. A small ceremony was organized on this occasion, officiated by respected Prof. B. K. Mishra, Director of IIT Goa. CPWD officials, Director of SCON, Prof. Rodney Fernandes, Dean of IIT Goa, Mr. M. Shakeel, Registrar in-charge, Dr. Appaji and the students of IIT Goa were also invited. Everyone was excited about the new hostels as plans cum blueprint of the hostels were also presented to us. The new hostels are going to have four blocks, three for the boys' hostel and one for the girls' hostel. Other facilities, such as outdoor sports courts and indoor common rooms are also going to be built. The hostels are expected to be ready by July 2018.

READING ROOM

In early November, the institute was granted space on a sharing basis in the GEC Old Library which is now being used as Study Room for the students. The present timing allotted to the students is from 5 pm to 12 midnight during the week.

According to the administrative staff - "The absence of a study room for students was one of the major obstacles that the institute faced since the beginning of the 3rd Semester (after the previous study room was converted into a conference room). We took this matter into account, and after some persuasion, we were finally given permission to use this new space. We have appointed our own security and also a person in-charge during our time slot to ensure the safety and a disturbance-free atmosphere for the students."

It is hoped that the students will appreciate, use and maintain the facility given to them by the institute to study and work towards improving their academic knowledge and skills.

VOLLEYBALL COURT

The current boys hostel underwent some modifications in December 2017. It now has a volleyball court in the backyard. This was done as there weren't enough sports facilities available in the GEC Campus, which had only a football court, cricket pitch and a single badminton court. Now, the boys hostel contains a volleyball court along with a common room which has been converted to a Table Tennis room.

LIBRARY

The Institute's library has also shifted from a small room in the Administration Block to a bigger hall on the second floor in the IT Building. This was urgently needed as the old library was not spacious enough to accommodate the needs of the students, which will only grow with every passing year.

CRICKET

A state of art cricket training facility was introduced at IIT Goa in January, 2018. The training facility features two cement pitch and contains eight floodlights. The much needed facility is expected to help the institute cricket team, which was able to win a match at the Inter IIT Sports meet, achieve greater height and be better more successful.

52ND INTER-IIT SPORTS MEET

Inter IIT 2017: IIT Goa Cricket Team

HIMANSHU SINGHAL

The Indian Institute of Technology, Madras hosted the 52nd edition of Inter-IIT sports meet from December 15 to 23, 2017.

This year the students of IIT Goa got an opportunity to participate in several sports like Cricket, Football, Badminton, Table Tennis, Athletics, and Chess. The chess meet saw participation from 16 IITs.

The cricket team qualified for the Pre-Quarter final by defeating IIT Bhubaneswar. Mr. Neeraj Khatri and Mr. V. Prakhyath Shree Harsha were some of the star players of the match. The girls badminton team comprising of Ms. Avya Bansal and Ms. Gouri Birhare proved themselves by defeating IIT Ropar. The football team and badminton men's team also gave their best but came up short. The Table Tennis and the Athletics team also put up a good fight but could not register a win. In chess, Mr. Abhishek Varghese, the team captain, won two matches and had one end in a draw. Mr. Rao Janmejay and Mr. Sriniwas won one match each for their team.

All the participants came back feeling motivated and inspired to train harder and perform better at the next Inter-IIT.

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