

4th Convocation

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Address
by

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भारतीय प्रौद्योगिकी संस्थान रोपड़
INDIAN INSTITUTE OF TECHNOLOGY ROPAR

You: In Shaping India's Future

Prologue

Chairman and Members of the Board of Governors, Professor Sarit Das, Deans and Faculty, staff of Indian Institute of Technology Ropar, Parents and family members, students, distinguished guests, graduating members of this great institution, friends, members of the media, ladies and gentlemen, very good morning to all of you. The other day, Professor Das called me up. There was a tone of urgency in his voice. Sensing the disquiet in his voice, I said "Whatever you want, I will do. What do you want me to do?" Then, with a sense of relief, he asked me as to whether I could deliver this convocation address? I agreed readily. Perhaps, without exaggeration this is one of the convocations that I agreed to speak at without a second thought. There is an emotional connect between IIT Ropar and me for historical reasons. Having participated in the first convocation of this institution in a different capacity, I feel one with all of you. Let me begin this address with a special sense of feeling of a perpetual well-wisher of IIT Ropar and IIT graduates. Let me congratulate the institution, parents and relatives, prize winners and graduating students.

Story of Indian Institutes of Technology: As Change Agents for India

Ladies and Gentlemen, in 1950s, India was a poor Nation fraught with multitudes of problems. In spite of resource constraints and what seemed insurmountable challenges at that time; Indian Institutes of Technology were founded in the 1950s drawing strength from other Nations. That Indian Institutes of Technology would play a key role in the economic development of India has been a cherished hope then. IITs have indeed emerged as brand institutions. Several game changers of Indian origin have been prepared by this branded group of institutions. Members of the alumni body of Indian Institutes of Technology have established themselves creditably as successful professionals across the world. Extraordinary performance of the Alumni base of IITs established in 1950s motivated the Nation to establish another and new set of IITs during the last ten years. These Institutes have been established during aspirational times and are the children of good times.

Rationale for the Choice of Theme for the Conversation

Ladies and Gentlemen, I am aware that this is a day of celebration. It is day of milestone in the lives of those who graduate. Today earmarks a culmination of fruit of labour for both graduating students and their parents. Let me greet all of you on this occasion and wish resounding successes in your lives. A convocation address must also deliver another function apart from greeting. It should connect your minds to the very purpose of learning and responsibilities as citizens as well as human beings of value. It should convey a message. Needless to say that majority of you would be successful professionals in your chosen paths in the years to come. For delivering larger good, competence alone is not adequate. One needs to build character. Hence, I propose to engage your attention for a few minutes in some-what serious dialogue; tearing your minds away from the celebratory mood and speak to you of your larger responsibilities in the later part of your lives.

All of you are extra-ordinarily special. Many of you are inspired people. Your institute has strived to provide you all an inspiring ambience. The Nation has invested upon your inspirational attributes. What is expected from many of you, if not, all of you are inspired contributions in shaping the future of India? Hence, I have chosen to engage in conversation with you on the topic "You: In Shaping India's Future."

Roles and Responsibilities of the Present Generation of Indians in Shaping Future of India

An ancient civilization had carved out a society which was rich in cultural diversity and spiritual elevation. The concept of India did not exist then. At the middle of 18th century, Indian civilization enjoyed a share of more than 25% of the global economic product. The first quarter of 20th century, India was fighting a different battle, for political freedom. A generation of Indians were preoccupied with freedom struggle in their youth. For them, to sacrifice was duty. They had to create opportunities denied to them by foreign rulers. Tagore and CV Raman won Nobel Prizes in spite of prevailing circumstances. In the middle of 20th Century were born a generation of Indians as citizens of a free Nation. A majority of us belonging to that generation were preoccupied with our own financial insecurity and other personal concerns. Some of us had no plans for future and lacked ambitions for the Nation. In the third quarter of the

20th century were born a generation of Indians, who suffered comparisons with other societies. Several of them moved overseas for greener pastures. There was limited capacity within the country to invest upon their talents and realize national outcomes from their contributions. Any balanced analysis would reveal possible circumstances in which a generation of Indians chose to shape futures of other Nations rather than their own mother land. In the 1990s, India was ushered into globalization of economy. Powers outside Nations started to set National agendas. Globalization started to impact India.

At the beginning of the present century, the world came to realize that the next best generation of Indians have arrived in the global scene. Some of such people who revealed the world to India and India to the world were alumni of IITs. Many of you were born when India had turned into a happening country. India has already emerged as an important economic power in the changing equations of the world.

I group five Indian generations as those belonging to freedom struggle, deprivation syndrome, comparison syndrome, Globalization-cult, and leadership aspiration. I sense a hunger for leadership aspiration among several young people of the country. You are the best hope. You need to play larger roles than the previous generations of Indians. You need to realize the dreams of more than 1.2 billion souls. Changing India is not just a theme of discussions. It is a yearning of billion people and more.

Demographic dividend of India is much spoken about globally. You belong to that celebrated dividend. In a competitive global order, only those who would out-compete other cohorts would thrive. "Survival of the fittest" as theory of evolution taught human beings an important lesson. "Fitter of the Fittest alone would thrive" is the current doctrine of the world order. Several of you studying in IITs have shown your potentials for success in a competitive world order. You are not just survivors. You are a bunch of thrivers.

The question to be answered is whether India as a country would succeed among the comity of Nations. Optimists truly believe that India would succeed as a Nation. I am also one of those optimists, who instead of staring at cashew cake; wish to eat and work out for burning the energy away rather than to worry about calories. Winston Churchill once said "Future empires would be built by those who command knowledge". By

investing into the establishment of knowledge institutions, India aspires to position herself strongly and command knowledge. In the success of India, question ahead is what roles several of you graduating from this branded institution would play? I foresee large and defining roles. Hence this conversation is not only about shaping your own future as professionals but also that of a country which is likely to emerge as the most populous and diverse democracy of the world.

Education: A Process and a Journey

Ladies and Gentlemen, in a materialistic world, education has come to be regarded as a product or a commodity delivered in exchange for money. Physical incomes earned out of the degrees earned out of institutions are accorded high importance. Institutions across the world are graded based on pay packages of the graduates. Truly, education is much more than a passport for entry into job markets. It is about the preparation of unprepared minds and should aid in building character worthy of emulation. Education should address not only the immediate needs of living but last the entire journey of life. It should enable a learner to develop a persona. These were the traits of education imparted in this ancient civilization. All of us are inheritors of rich eastern cultures. I wish to quote from the Nobel lecture of Gurudev Tagore. He said in his address delivered on 26th May 1921.

"We lost our confidence in our own civilization for over a century, when we came into contact with the western races with their material superiority over the Eastern Humanity and Eastern culture and in the educational establishments no provision was made for our own culture. And for over a century, our students have been brought up in utter ignorance of worth of their own civilization of the past. Thus, we did not only lose the touch of the great which lay hidden in our own inheritance, but also the great honour of giving what we have; not merely begging from others, not merely borrowing culture and living like eternal school boys.

But the time has come when we must not waste such our opportunities. We must try to do our best to bring out what we have, not go from century to century, from land to land and display our poverty before others. We know what we have to be proud of, what we have inherited from our ancestors and such opportunity of giving should not be lost not only for sake of our country but for the sake of Humanity".

Ladies and Gentlemen, life is an endless journey in which experience

would teach new lessons. Learning never ceases. What all of you have learnt today is learning to learn. There must be purposes for one's life too. When the purpose is to serve one's immediate needs of living in this materialistic world, there would emerge a certain level of psychic income. When the purpose serves lofty and super-ordinate goals relating to larger public and social good, altogether different levels of psychic incomes are feasible. Gurudev talked of such an education that would enrich the society. In a way, all those graduating from the celebrated Indian Institutes of Technology bear a certain responsibility to serve the society and causes of larger humanity itself along the journey of your lives.

Indian Institutes of Technology: In the changing World Order

India has chosen to invest into higher education of this generation of Indians liberally with hope that in 21st century your education would help India emerging as a major knowledge and economic power. When India invested into IITs in the 1950s, there was an altogether different context. Graduates trained in IITs along the grooves of best of engineering education in the industrialized world would help in the transformation of the country through their technological prowess was the expectation. When the new IITs were established, motivation levels and contexts were different. Aspirational levels are no longer moderate. World scene has also changed in favour of technology led economic growth.

World has moved into a new order where access to innovations and technology influence the power equations among Nations. Global trade has come to be more strongly coupled to technology. During the 1950s, it used to be said that addition of labour to raw materials generated capital. Since 2000s, it is widely believed that Technology leverages wealth generation from raw materials. In the changed world order, technology has entered centre stage, we must agree.

Establishment of New IITs must be seen not only as investments into proven and celebrated successes of older IITs but also a preparation of the country for moving high into the world order dominated by technologies. More than million young people aspire to gain education in IITs every year. Less than one percent of aspiring and supremely talented youngsters gain access to education in this branded body of

institutions. Enlarging access to the celebrated educational opportunities in IITs to young people is only one reason for establishment of new set of institutions. There are larger aspirations of the society from IITs than ever before. In the world technology order, IITs need to carve a special niche and emerge as game changers as institutions.

Training world class engineers and technologists is no longer adequate. Under-graduate education prepares people. Centres of higher learning should aim at much more than preparing experts and expertise. Leadership in technology space and competitiveness of production systems in High technology Trade demands another set of tasks. IITs may need to challenge themselves through process innovations and aim at larger national outcomes. Incremental additions would not suffice. There must be signatures of IITs in globally competitive technologies conceived, developed, and delivered by IITs. They need to change technology paradigms.

Ladies and Gentlemen, I perceive that India is in a path of renaissance currently and perhaps at the right time. Many nations embraced paths of industrial revolution and generated capital at the expense of too much of natural resource and wasteful use of energy during the 19th and 20th centuries. Technologies of the past seem to have led to unexpected and un-desirable changes in global ecology. India could benefit from the lessons learnt by the world. India could seek an alternate technology path for shaping future.

Indian Institutes of Technology: In Shaping Future of India

It is one thing to target goals to emerge as front runner among cohorts, but it is a different challenge if changes in basic paradigms were targeted. Global ranking of institutions is much spoken about. I am not certain as to whether social impact of institutions and their work could be measured reliably. People tend to measure what is measurable, especially when what is needed to be measured defy measurements. What is the use of institutions ranking high in global ranks for their outputs when they fail to create gainful outcomes to the society which invests in them? IITs have contributed in no small measure in the past in elevating the spirit of the Nation. They may need to perform different roles in shaping future of India. It would be much more than training world class undergraduates.

IITs could emerge as the technology gate keepers and agents of change towards sustainable technology-led development path. This might call for more clear definition of both goals and motivation as game changing institutions.

India will soon emerge as one of the five largest economies of the world. Billion people and more would like to enjoy the living comforts of their counterparts elsewhere in the world. Security of food, nutrition, energy, environment, human health and many others gained at the expense of least amounts of material and energy inputs and renewable energy and raw materials would emerge as the most important challenge. Highly resource intense model of Research and Development built on the grammar of unsustainable consumption is not sustainable. Researchers in Nations like India need to work on a different grammar. We need to work on input optimization and sustainable consumption with resource optimization as the new mantra.

In the past, Indian researchers focused their pursuit in understanding Nature and revealing natural phenomena. Now questions are being raised as to what societal problems research is able to solve? In this regard, IITs have newer roles and responsibilities. It concerns paving a technology-led path for development of India.

India currently is net importer of high technology products with a negative balance of trade in seven of the nine sectors studied according to UNESCO Global Science Report released in 2010. Judging from such data, it becomes apparent that technology strength of institutions like IITs is not translated into national outcomes and advantages in trade. There are wide gaps in our potentials and performance as a Nation in technology space. It is refreshing that IITs as a group of institutions have started to invest their efforts in research and development in recent times. Indian research in engineering, materials sciences, computer sciences, energy fuels, pharmacy and telecommunications, has started to become significant. By volume of research publications in these research areas, India figures in the top three to five ranks. In this upward trend, research outputs from IITs form important contributors. Translation of research outputs to technological outcomes calls for important mindset changes and different level engagement and partnerships in the mind to market chain. Let me articulate the types of changes needed for making tangible national outcomes.

Preparing and Connecting Minds and Developing Mindsets: New Challenge

Educational institutions limit their focus to preparation of unprepared minds. Research systems aim to question the known answers and frame new thought paradigms. IITs have prepared minds of several thousands of Indians admirably in the past.. Strength of individual Indian minds, especially in analysis, is well known. Attributes of a "Minds-on" society became globally visible. However, world technology order relies on "Hands-on" approaches. Leadership in technology demands a different game plan. It calls for ability to synthesize. It demands team effort. Individual successes do not often add up into team performance. Ask the Indian cricket teams, they would reveal telling stories of individual performance not adding to successes in the play field. Connecting minds and developing a mindset to synthesize unique solutions to intractable problems is a new challenge ahead of our research systems.

Role and Opportunities for new Indian Institutes of Technology: In Shaping Future of India

It is one thing to showcase our analytical ability but another to win in the market place by providing total solutions to knotty of problems of commercial value. These would call for cultural changes in work place and new paradigms in work ethics. The new Indian Institutes of Technology established at the times when India has been a happening country are in an ideal position to seed and propagate such new work culture. You are in a good position to prepare a new brand of professionals with mind sets and ability to lead and contribute to transformation of the country.

Whereas established institutions with history are dominated by legacy and formed character often carved in stones, new institutions are free to choose an organizational culture more tuned to the time of need. There is greater flexibility for moulding organizational character. New IITs could enjoy the benefit of social endorsement and esteem earned by the older IITs without their burden of legacy-induced limitations. Talented students seek to study in these institutions because of the brand value earned by the Alumni of older IITs. My friend, Dr. Dande used to say "Gold in. Gold out. What is the role of goldsmith?" Friends, IITs are like goldsmiths. Ornamental value of gold is in shaping the lustrous metal and not just in

polishing the surface alone. You need to build character among your students. In them, you need to create a purpose for their lives and living. Their minds need to see beyond what is observed. They need to see beyond physical well-being of themselves and those of their immediate families alone. They need to embrace Nation building roles. Their vision needs to be grand and goals super-ordinate. They must be leaders who care for the social and public good for all time to come. They should resist tendencies to become the types of managers who please people of the time. New IITs must be able to create leaders who not only excel but also integrate with the society. Let me wish that new IITs would become role models for other institutions including the older ones. They should emerge as the Next Best Generation of Academic Institutions which impart among their learners both character of eastern cultural value systems spoken about by Gurudev Tagore and global competitiveness in materialistic world dominated by technology-cult. I know it is a tall task. Nothing worthwhile could be established without profound challenges. I have also a call to make to the Next Best Generation of Indians assembled in the house.

Call to the Next Best Generation of Indians

Ladies and Gentlemen; I like to view the present generation of Indians as the Next Best Generation. They would constitute nearly third of the global youth population in 2035 and represent third of youthful energy of the world. They are inheritors of strong human values spoken about by Buddha, Mahavir Jain, Adi Shankara, Mahatma Gandhi and many extraordinary souls. People graduating today from IITs are special people, specially selected, carefully shaped and released into larger society with great expectations. Your inspired thoughts and follow-up actions must lead and spread the message of goodness combined with greatness and not just reflect the shine of greatness alone. You must contribute to the happiness of people around you.

Let me finish with a parable. Long ago, a group of people from Persia approached a king in Gujarat for a place to live. The king was not inclined to extend to them living space. He beckoned to someone to bring a glassful of milk and symbolically conveyed that there was no room in the kingdom for the new immigrants. A wise Persian brought sugar and added to the milk and conveyed that the new group would not just occupy space in the society. They would merge and add sweetness and

value to the society. Ladies and Gentlemen belonging to the Next Best Generation, you would be a major global force to reckon with. You would command 35% volume share of youthful energy. You should not simply occupy physical space. You need to add values to society through your personality of combining goodness with greatness by delivering values in mind space.

Working alone one could add only limited values and solve problems that an individual mind could grapple. Working in teams with a motivation to combine ability, analyse with desire to synthesize, we could change the world order. Let me wish that several of you would emerge as great team players whose contributions would add up and contribute to shaping future of India. Along with your parents, Indians have invested into shaping your future. Give both your parents and the country back in your own time, in your own styles and in quality that you consider best to give it as. Please do give back to India through your contributions to the renaissance of this ancient civilization built on the principle of individual salvation and spirituality.

Epilogue

You, the members of the Next Best Generation, are certainly the future of India. Let your inspirations flow. Let your goals be lofty. Let your work focus on "happiness and benefits to others". Let a new brand of thought leaders and action heroes emerge from the Next Best Generation of Academic Institutions. Please carry on your shoulders the pride of being an Indian and responsibility of working for shaping future of the Nation.

Oh! My sons and daughters, rich is our civilization

Being built with the tools of composite education

We have borrowed this from our next generation

Are we not duty bound to enrich this civilization called India?

Jai Hind. Long live the spirit of India built on high moral principles of "World as Family".



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