

## **Speech by The President of India, Shri Pranab Mukherjee at the annual convocation of The Indian Institute of Technology Delhi**

New Delhi : 09.11.2013

I am happy to join you on the occasion of the 44th Convocation of IIT Delhi. It is my privilege to be amidst you in this beautiful campus.

At the outset, I would like to congratulate all of you, who will receive medals and degrees today. Your dedication, sincere effort and academic brilliance have led you to this level of achievement. Today is the beginning of your life-long process of learning for which IIT Delhi and its excellent faculty has equipped you.

You have the knowledge that gives you unparalleled confidence in your chosen field of study. But knowledge must also bring in humility. Humility teaches you to appreciate others, enables you to acknowledge that there can be a number of equally valid approaches to meet the same objective. Humility inculcates in you the ability to assess yourself critically in the context of the society and the country. Be broad-minded and tolerant. Never lose the zeal and spirit to question. Have the strength to defend what you think is right. These qualities, which your alma mater has instilled in you, will be useful as you move forward in your career.

It was the vision of our first Prime Minister Pt. Jawaharlal Nehru that gave birth to the IIT system of which IIT Delhi is a proud member. IIT Delhi has vigorously pursued its dream of creating an infrastructure of excellence and in this process through its glorious existence of over 50 years, IIT Delhi has positioned itself firmly on the global map.

Today, the IIT Delhi's alumni are achievers and leaders in every sphere of human activities – in India's most successful corporates and government ministries and in laboratories of research and innovation, here and across the world – living their IIT Delhi background and bringing home laurels. The country is proud of the contribution of these alumni in creating the technological manpower for our nation building and economic development. Today, the IIT Delhi has become a global brand amongst the employers, academicians, scientists and industrialists. You are going to join this growing and expanding list of alumni of this prestigious institute. Always remember your alma mater and participate actively in the further growth of this great institute. I expect each one of you to make this institute proud of your achievements.

The success of students depends upon the quality inputs imparted to them during their study in the academic institutions. The success of the students, apart from their own intelligence and hard-work, also depends largely on mentoring during their student-ship. I am happy to note that the faculty of IIT Delhi has contributed in creating a class of students, whose knowledge is based on core areas of science and technology. This systematic development of scientific and technological manpower has enabled India to emerge as a knowledge power house. For this, I

would like to convey my appreciation to IIT Delhi faculty members, who have travelled extra miles to make Pandit Nehru's dream of extensive application of science and technology for liberation of masses from the clutches of poverty, superstition and ignorance, a reality.

IITs are expected to educate and empower growing number of today's youths. Excellence in education has direct impact on the society. High quality education can improve the quality of life for all citizens. It can transform the society into a meritocracy where a person succeeds because of ability and hard-work. IITs have nurtured excellence. Shedding of the shackles of mediocrity is the key challenge for IIT system and IITians in the 21st century. The answer to this challenge lies in your heads and hearts, as you all are going to govern the society and the system in future.

The access to quality higher education is a big challenge in India. A large number of Indian students are moving to foreign destinations chasing their dreams of quality higher education. What can we do to become importers of foreign students rather than exporter of Indian students? Can IITs, by effective use of technology, provide opportunity to millions to fulfil their dream of quality higher education? There have been initiatives in this direction but much more needs to be done. We all have to move quickly and collectively to achieve the desired objectives.

In recent times there has been a major expansion of the IIT system and increase in the number of seats. The number of IITs has also increased to 16. The IITs in the early sixties were set up in collaboration with the friendly countries, which provided support to India in realizing its dream of becoming a country with a scientific temperament. This hand-holding by the institutions of the friendly countries to IITs has also given us a model for future. The time has come when the established and old IITs have to provide the same kind of support and hand-holding to new IITs and other institutions of national importance in bringing them on the international map of higher and technical education. Only through such collaborations, we can ensure that the aspirations of younger generations for access to quality education are fulfilled. I am sure; all of you will join in making this happen in the years to come.

Today, country's economy is driven by knowledge. Knowledge is the currency of modern economy. IITs, including IIT Delhi, need to take giant leap as contributor of new knowledge. This can happen only by further strengthening and enhancing post-graduate education and research in the IITs. We know that IIT Delhi is pursuing top-class research in a number of areas like nano-technology, smart textiles, communication systems, algorithms and environmental sciences. But IITs have so far not been very successful in attracting its under-graduates to post-graduate education and research. IITs should devise some strategy to have under-graduates joining their PG programmes. I understand that very few IIT graduates are pursuing specialized education leading to Ph.D. or any other higher degree. In the long term this will deprive country of the talented specialized technical personnel who are the most important assets in a knowledge economy.

The creation of intangible assets in an economy through knowledge, research and innovation is an important sign of a developed country. Many of the advanced countries and some of the developing countries are creating and owning the intangible assets through patents filing. This is happening due to emphasis on research and development. India, in spite of its strong scientific and technical manpower base, is still far behind in creation of intangible assets and ownership of

patents. The time has come to reverse this trend, which is only possible through dedicated programmes for research in the frontier areas of technology, engineering and science.

In India, against the total student strength of 71,000 in National Institutes of Technologies, there are about 4000 Ph.D. students. In IITs, against the total student strength of 60,000 there are around 3000 Ph.D. students. This indicates that bright students are not taking up research and innovation in adequate numbers. If we can orient these students towards the research, then later on they can join as faculty in IITs and other institutes of national importance. This may help us in meeting the faculty shortages faced by our technical institutions, including IITs.

India ranks 12th amongst top 20 countries, in terms of publications on science and technology. India has 119 researchers in R & D per million people, as compared to 715 of China and 468 of the United States. We need to improve our standing in terms of publications and researchers employed in R & D field. This is possible only if the brightest students take up research and development at young age.

Government had appointed a Committee under the Chairmanship of Dr. Kakodkar for comprehensive reforms in Indian Institutes of Technology. The Committee has laid down a roadmap to increase the number of Ph.D. students in IIT system ten-fold in about ten years and also to increase the number of faculty in IIT system to 16,000 in about ten years. The road map should be expeditiously followed to see that India emerges as a leader in the field of research, innovation and patents.

I understand that IITs in general, and IIT Delhi in particular, are now laying emphasis on producing quality Ph.D. engineers and scientists. I urge graduating under-graduates to rethink about their careers options. The satisfaction, the excitement that you can get by generating new knowledge can never be matched by financial benefits. This country needs to produce not thousands but lakhs of Ph.D. for India to become a technical super power. IIT Delhi through its innovative schemes can really take a lead in this direction and become a role model for other institutions to follow.

In Bhagavadgita, the aim of education has been described as 'second birth' - "Tad dvitiam janma". How you utilize your second birth is in your hands. You are the master of your destiny in this journey and you have been fully equipped by the able faculty of IIT Delhi. I wish you 'God speed' and success in your journey, as you leave the hallowed portal of this great institution.