

The Times of India Online

Printed from timesofindia.indiatimes.com >India

Indian science loses to China

JOHNSON T A

TIMES NEWS NETWORK [WEDNESDAY, JUNE 30, 2004 10:29:47 PM]

* Between 1980 to 2000, the number of scientific papers from India, indexed in the Science Citation Index, fell from 14,987 to 12,127. China's grew from 924 to 22,061.

* A recent much accepted top 500 ranking of world universities features only three Indian universities - one in the 251 to 300 rank slot and the other two in the 451 to 500 slot.

* Among the 149 top countries in science and technology, India ranks 119 when it comes to number of citations per scientific paper.

BANGALORE: While a debate has raged in scientific circles over the past few years on India's scientific prowess - vis-a-vis the rest of the world, there is now an almost universal acceptance that a rot has set in.

Academic ranking of top 500 world universities

Country	University in top 500	Highest	Rank	Asia/Pacific Rank
USA	161	Harvard	1	NA
UK	42	Oxford	9	Na
Japan	36	Tokyo	19	1
China	18	Natnl Taiwan Univ	152-200	18-22
Australia	12	Australian Natnl Univ	50	3
India	3	IISc	251-300	27-36

In terms of interest in science, investment, institutes, number of scientists, scientific papers and their quality, Indian science is on the decline, say experts.

"There is very little doubt now that science in India has not kept pace with its competition. While countries like China and Brazil are galloping ahead we are far behind," says the director of the Indian Institute of Science Prof Goverdhan Mehta.

Next Page: [China forges ahead, India lags behind](#)

"The fact, however bitter, is that India's contribution to science has come down enormously. We are not comparing ourselves to the US or Japan anymore, but to China and South Korea," says eminent scientist Prof C N R Rao.

Areas like physics, chemistry are seeing hardly two hundred papers emerging from India per annum, he says. "Take my area of chemistry, China used to contribute 3 per cent of chemistry papers a few years ago. Today, it contributes 10 per cent. India used to contribute 8-10 per cent, but today it contributes only 2.5 per cent," Prof Rao points out.

"A grossly sub-critical effort is responsible for our under achievement as seen in our share of global research and development output, which is only 1.58 per cent," says scientist-in-charge of the Centre for Mathematical Modelling and Computer Simulation (C-MMACS), Dr Gangan Prathap.

While funding for research has increased marginally in recent times, the decline in the university system - with research shifting to specialised agencies, and the lack of support systems to match the changing face of science, are obvious reasons for decline, says Prof Mehta.

Incidentally, the 'academic ranking of world universities 2003 is among the most recent indicators of the health of Indian research.

Next Page: [IISc is the only one in the list](#)

The Indian Institute of Science figures as India's highest representative in the ranking at 251 to 300, while IIT, Delhi and Kharagpur figure between 451 to 500. "There should be at least 100 world class universities in India itself," says Prof C N R Rao.

To keep pace with the developed world, India has to step up the number of research and development workers by a factor of 12 and increase scientific effort 50-fold, says Dr Prathap.

Judicious employment of people, making science more attractive monetarily and a pride in doing research for the country are crucial ingredients for growth of science in India, says Prof Rao.

"Stronger science and technology capacity in developing nations is not a luxury but an absolute necessity to participate in the world's fast forming, knowledge-based economy," states the recent report "Inventing a better future" from the international science advisory - the Inter-Academy Council - co chaired by Prof Goverdhan Mehta.

Related Stories



[India shining: Economy second only to China](#)



[Forum: Is Indian science going downhill?](#)

© Bennett, Coleman and Co., Ltd. All rights reserved.