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Salam's Nobel feat

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On November 21 the world community of scientists met at Trieste, Italy, to commemorate the first death anniversary of Pakistani Nobel laureate in physics, Professor Abdus Salam.

There was intense academic activity in the form of lectures and specialised research seminars on various aspects of physics and mathematics at the International Centre for Theoretical Physics (ICTP), which Prof Salam founded at Trieste in 1964. The culmination of the event was the changing of the name of the centre to "Abdus Salam Centre for Theoretical Physics". This is a tribute to the great man who will be remembered by the world for all time to come. Pakistan will always be known to anyone who asks who Salam was and to which country he belonged. It is Salam's gift to his country, of which he kept nationality despite other countries offering him citizenship.

Salam's contributions to Pakistan are often not understood in the true perspective. One hears people saying that Salam lived abroad, so what contributions did he make to Pakistan. The important point to understand is that if Salam had stayed in Pakistan, the lack of scientific culture in the country would have buried him under an unacademic cloud. He would not have become a Nobel laureate, but at the most a prominent professor. He was correct in leaving Pakistan to work with famous physicists abroad which helped him develop as an outstanding academic.

By remaining outside Pakistan he was also able to influence the scientists of the advanced countries and benefitted Pakistani scientists by securing admissions for higher degrees (PhDs) and by securing training courses in advanced laboratories. In this capacity his suggestions were entertained. His words were also attended to by the Government of Pakistan in a better way than they would have had he remained in Pakistan.

It was Professor Salam's wish that the International Centre be in Pakistan. He tried hard to move government functionaries to work in this direction. The other possible places for the centre were Italy, Denmark and Poland. Pakistan's response was not very enthusiastic and Italy offered the best facilities. It offered a good building for the centre, free land and expenses for the utilities as long as the centre operated there.

At its set up Professor Salam became founding director of the ICTP and the Italian Professor P. Budini his deputy director — the duo which worked so well

for many years to the age of their retirements. This unique and harmonious team gave stability and crowning success to the activities of the ICTP. Within a few years the centre became the hub of academic activity for famous scientists from the advanced world and young scientists from the third world.

A number of useful projects were undertaken. One major scheme was several-weeks lecture courses in which a dozen eminent lecturers from advanced countries read papers to about a hundred participants from developing countries. Through the scheme of research associates, select young scientists from developing countries were offered three short visits of about three months duration each in five years to carry out research at the centre in close collaboration with eminent scientists from advanced countries.

Young scientists were thus exposed to contemporary ideas and latest scientific developments. They returned to their home institutes to continue research there. In this way these countries were helped to avoid the scourge of brain-drain, and at the same time benefitted from the newly-acquired knowledge of the young scientists.

Having personally benefited through these schemes for 20 years from the ICTP, I have seen young scientists from many developing countries greatly benefitting in a similar manner. A large number of Pakistani physicists, particularly from Pinstech; Quaid-i-Azam University, Islamabad; Government College, Lahore; Karachi University; Punjab University, Lahore; Gomal University and other scientific institutions have gained from the Centre. According to recent figures, the number of visits to ICTP by scientists has been around 60,000 from over 80 countries. This is no mean achievement and has benefitted the third world.

In 1989 the ICTP celebrated its silver jubilee. Some 200 physicists were invited for three weeks of celebrations. Seminars by various scientists were held as were discussions on various branches of physics and mathematics. Among the eminent scientists from both the advanced as well as developing countries were six Nobel laureates and some potential Nobel laureates.

Two occasions were emotional for me as a Pakistani participant. One was the inauguration day when the then prime minister of Italy Mr Andriotti presided over the function. It was touching to hear the technical short review by the Nobel laureate Prof Ting of MIT when he revealed the one-week-old experimental results taken at CERN (Geneva) confirming Professor Salam's

theories on the unification of forces in nature.

The other emotional occasion was the last day of celebrations when Professor Schrieffer from US (the 1957 Nobel laureate at the then young age of about 27 years) was acting as moderator at the occasion. It was extremely heartening to hear Professor Schrieffer when he said, "Professor Salam, hats off to you (and he bowed to him). ICTP is not only a centre of physics, it is the centre of science for the world as a whole."

Professor Salam missed the Nobel prize, many say, a couple of times. Once in 1956, on the discovery of parity violation in nuclear reactions when the two Chinese Lee and Yang working in the US won the Nobel prize on an independent work on the same subject. The other time was in 1964, when the particle omega-minus was discovered and the prize was awarded to the American physicist Murray Gellman.

After missing the Nobel prize in 1964, I think Professor Salam vowed to achieve his dream and directed his efforts towards this goal. In order to convince notable world scientists of his scientific calibre, Professor Salam invited a large number of Nobel prize winners to the ICTP and convinced them of his understanding of higher physics during discourses and academic exchanges.

Over the years discussions with a large number of eminent physicists including Heisenberg, Oppenheimer, Bethe, Wigner, Dirac, Landau, etc., led to his ability as a potential Nobel prize winner being recognised. At the same time he continued intense efforts to produce remarkable results in his research. Ultimately, in 1979, he succeeded in winning the Nobel prize for his theory of unification of electro-weak forces. It is believed that he was striving for a second Nobel prize.

Professor Abdus Salam was a Pakistani to the core of his heart, and he died as a Pakistani. The country should honour this rare national who has etched the name of Pakistan on the golden page of world history of science. A road in his name, say in Lahore along his alma mater, Government College, and the naming of the National Physics Centre (in process in Islamabad for which the President of Pakistan has already allocated 10 acres of land at the QAU campus) would be a way to pay tribute to this legendary genius of Pakistan.

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