Abdus Salam: The Muslim science genius forgotten by history

The Pakistani physicist’s work led to the discovery of the Higgs boson, but he was disowned in his home country for his faith. Now a Netflix film is putting him back in the spotlight.

By Abigail Beall

In 1979, Pakistani scientist Abdus Salam won the Nobel Prize for physics. His work was key to defining a theory of particle physics that was still used today, and it laid the groundwork for the 2012 discovery of the Higgs boson – the particle responsible for giving all other particles mass.

Salam was the first Pakistani to win a Nobel, and his victory should have been a historic moment for the country. But instead, 40 years on, his story has largely been forgotten by the country in which he was born – in part because of the religious identity he held so dear. Now a documentary on Netflix, Salam, The First Muslim, is seeking to bring Salam and his achievements back into the spotlight.

"Salam was the first Muslim to win a Nobel science prize," Zakir Thaver, one of the film's producers, tells BBC Culture. "He was so committed to his roots and bettering the plight of his people that he wore a turban in Stockholm to receive the prize from the King of Sweden." During his speech at the Nobel Banquet, Salam quoted the Koran.

"There, Salam’s skills in mathematics and physics set him apart from his classmates. He won a scholarship to attend Cambridge University, where he became one of the few South Asian faces at the time in St John’s College. But the pull of home was strong: after completing a doctorate at Cambridge, he then moved to Lahore to work as a Professor of Mathematics.

Reconciling science and religion

Throughout his life, Salam was a dedicated Muslim. He listened to the Koran on repeat while he worked in his office in his London home. He never saw his religion as a barrier to his science. In fact, he saw them working together, and claimed to colleagues that many of his ideas came to him from God. He was striving for a unified theory that would explain all of particle physics, which was in line with his religious beliefs. "We [theoretical physicists] would like to understand the entire complexity of inanimate matter in terms of as few fundamental concepts as possible," he once said. But he accepted that there were areas of science that did not fit easily with his beliefs – like the Big Bang theory.

While his faith was deeply important to him, it was also a source of great pain, thanks to the way in which his particular sect of Islam, the Ahmadiyya Muslims, has been treated in Pakistan. The Ahmadiyya movement was formed in 1889 in Punjab in British India. Ahmadi Muslims believe their founder, Hazrat Mirza Ghulam Ahmad, to be the expected Mahdi and Messiah. However other Muslims do not agree, and instead they believe they are still waiting for him. "The Ahmadiyya Muslim Community is a law-abiding, loving community," says Aideel Shah, an Ahmadi Imam based in London. "However, it has been subjected to various forms of persecution and discrimination especially in Pakistan."

In 1953, the trouble really began for the Ahmadiyya Muslim community with a series of violent riots in Lahore against the movement. The Punjab government inquiry found the official death toll from these riots to be 20 people, but other estimates put it much higher, some in the thousands. A law passed in 1974 declared Ahmadis to be non-Muslims, and deprived them of their rights. As recently as 2010, two Ahmadi mosques in Pakistan were attacked, with 94 people killed and more than 120 injured.

"Even now, if an Ahmadi Muslim is to use an Islamic salutation, he is treated as a superior being to the Indian community with a series of persecutions and discrimination especially in Pakistan."

In 1979, Pakistani scientist Abdus Salam took home the Nobel Prize for Physics. His remarkable work in particle physics laid the groundwork for the discovery of the Higgs Boson, which is popularly known as the ‘God Particle.’

Ideally, an achievement like this would be celebrated in Salam’s home country even today. Unfortunately, four decades since the Nobel Prize, Salam remains mostly forgotten in Pakistan. This is because he was from the Ahmadiyya community, an Islamic sect long persecuted by the establishment in Pakistan.

In the midst of that, there is a profoundly poignant chapter which deserves a mention.

When Dr Salam won the Nobel Prize in December 1979, he issued a request to the Indian government seeking to locate his teacher Professor Anilendra Ganguly, who had taught him mathematics at the Sanatan Dharma College in Lahore. However, following Partition, Professor Ganguly had migrated to India.

Finally, two years after winning the Nobel Prize, Dr Salam went to pay his respects to Professor Ganguly at the latter’s residence in South Kolkata on January 19, 1981.

But why did he seek Professor Ganguly?

Well, Dr Salam believed that it was him who had inculcated his passion for mathematics.

"The teacher was feeble and unable to sit up and greet him when Dr Salam visited him in his house. Dr Salam took his Nobel medal and said that ‘Mr Anilen德拉 Ganguly this medal is a reminder of my teacher."

Continued on page 3
From page 1: Abdus Salam: The Muslim science genius forgotten by history

Unearthing a legend

Thaver says he and his co-pro- 

secretary from the ICTP in Trieste, 

in Italy, specifically to provide a 

space programme while during 

Dr. Salam was from Mohalla 

and Italian citizenship, but re-

young, foolishly ambitious, 

in the mid- 

October 1981. He was the first 

win a Nobel Prize. To the 

In 1979, just five years after 

most illustrious son of the soil.” 

most fundamental building 

theories of the electromagnetic 

from his story,” says Thaver.

Salam’s contribution to physi- 

lals in the developing world. To 

Salam: the Muslim science genius forgotten by history

Dr. Abdus Salam and his Hindu teacher

O n this #World- 

TeachersDay I 

will like to bring 

to your attention 

Indira Gandhi, who had 

in December 1979, soon 

after attending the Nobel award 

ceremony in Sweden. He had 

requested then Indian Prime 

Minister, Mrs. Indira Gandhi, to 

help him trace his Professor Anilendra 

Ganguly at Sanatan 

Dharma College, Lahore. 

Thaver visited India in December 1979, soon 

after attending the Nobel award ceremony in Sweden. He had 

requested then Indian Prime 

Minister, Mrs. Indira Gandhi, to 

help him trace his Professor Anilendra 

Ganguly at Sanatan 

Dharma College, Lahore. 

His mathematics teacher was 

Professor Anilendra Ganguly. He 

taught Salam mathematics at 

Dhara College, Lahore. Salam 

visited Calcutta to pay his 

respects to octogenarian 

Professor Ganguly at latter’s 

residence in Calcutta on 

January 19, 1981. 

After the partition he has 

migrated to India, 50 years 

after he had taught Dr. Salam, he 

visited him two years later, 

when he was awarded the Nobel 

Prize. He was conscious that his 

love for mathematics was instilled 

by Professor Ganguly at Sanatan 

Dharma College, Lahore. 

The teacher was feeble and 

unable to sit up and greet him 

when Dr. Salam visited him in 

his house. Dr. Salam took his Nobel 

medal and said that “Mr. Anil-en- 

dra Ganguly this medal is a re- 

sult of your teaching and love of 

mathematics that you instilled in 

me,” and he put the medal around 

his teachers neck. 

We are product of our #teach- 

ers Touché. 

The author is a physician practicing in 

Upstate New York. He is the Chief Editor 

of the Muslim Times, which has more than 

41,000 followers in Twitter. He is also Chair 

of Religion and Science for the Muslim Sun-

rise, the oldest Muslim publication in North 

America. He has authored more than 400 

articles on Islam, Christianity, Secularism 

and Religion & Science. Follow in Twitter: @The_MuslimTimes

Courtesy: themuslimtimes.info

The teacher was feeble and 

unable to sit up and greet him 

when Dr. Salam visited him in 

his house. Dr. Salam took his Nobel 

medal and said that “Mr. Anil-en- 

dra Ganguly this medal is a re- 

sult of your teaching and love of 

mathematics that you instilled in 

me,” and he put the medal around 

his teachers neck. 

We are product of our #teach- 

ers Touché. 

The author is a physician practicing in 

Upstate New York. He is the Chief Editor 

of the Muslim Times, which has more than 

41,000 followers in Twitter. He is also Chair 

of Religion and Science for the Muslim Sun-

rise, the oldest Muslim publication in North 

America. He has authored more than 400 

articles on Islam, Christianity, Secularism 

and Religion & Science. Follow in Twitter: @The_MuslimTimes

Dr. Salam needed a suit tailored 

last-minute, the shop he visited 

made special arrangements to have it ready for him, in time. He continued to buy suits at that 

shop for the rest of his life. 

However, Ahmad says, part of 

the story is missing. “It focuses 

on Pakistan, and sadly therefore 

it doesn’t have time to explain 

Abdus Salam’s passion and an-

ger to help overcome the greed 

and arrogance of the developed 

countries towards the developing 

countries,” he says. 

Since the idea for the film was 

born, the documentary has be-

come more and more important, 

says Thaver. 

“In the early days, we felt it 

was an important story to tell be-

cause of its power to inspire chil-

dren back home and to educate 

about Pakistan, Muslim Nobel 

Prize winner who was an unsung 

hero,” says Thaver. “Over the 

years the plight of religious mi-

norities in Pakistan, as well as 

the sub-continent at large, has 

worsened, and that’s given great 

present-day significance and rele-

vance to the story.” On top of 

this, he says, rising Islamopho-

bia in the West makes Salam’s 

story even more relevant while 

celebrating Muslim achievement, 

particularly in science, where 

the Islamic world’s contribution has 

been underappreciated. 

“Inequality in every sense is 

higher now than ever in histo-

ry,” says Ahmad. “Abdus Salam 

strived to make developing coun-

tries invest in education, science 

and technology to help their eco-

nomic prospects, whereby they 

would grow faster and more sus-

tainably with the support of the 

developed countries. That mes-

sage is as relevant now as it was 

50 years ago.”

Courtesy: bbc.com
Why don’t Pakistanis talk about Abdus Salam more?

Born in Jhang on January 29, 1926, Salam’s father was an official from the Department of Education. According to nobelprize.org, Salam was welcomed by his entire hometown on his bicycle ride back to home from Lahore.

From page 1: “This is Your Prize, Sir.” How a Pak Nobel Laureate Paid Tribute to His Indian Guru

Nobel Prize in 1979. Chaudhry, Salam received his time, Ayub Khan and Fazal Illahi

Professor Dr Abdus Salam, according to dams.org, Salam breathed his last on November 21, 1996. His body was returned to Pakistan and over 30,000 people attended his funeral prayers. He was buried in Rabwah next to his parents’ graves with a tombstone that read: First Muslim Nobel Laureate.

His son narrates another version of the story in the Netflix documentary.

He took the medal to his teacher in India, who was a very old [man] by then. His teacher was lying flat on his back and couldn’t get out of bed. And there is a picture of my father putting the medal (Nobel Prize) into his hands… And he told him, “This is your prize Sir. It’s not mine.”

It was the ultimate tribute to a teacher that went far beyond the parochial limits of religion and nation.

But this isn’t where the story ends.

According to this fascinating Twitter thread by Indian journalist Sanobar Fatma, in 1981 the University of Calcutta decided to award Dr Salam the Debaprasad Sarbadhikary Gold Medal to honour his achievements. Instead of accepting the award, Dr Salam refused and said it was his teacher who deserved it.

“The University later held an award ceremony in an aisle Atindranath’s South Calcutta residence in 1981, Dr Abdus Salam was present to see his revered teacher getting his due respect at last. A contented Anil babu died shortly thereafter in 1982,” read the tweet.

This was in line with the famous guru-shishya (teacher-disciple) tradition that many around the world, particularly Indians, hold dear.

It’s a real shame Dr Salam never received the same regard back home from his people except for a few students because of his faith, something which he held very dear.

However, his magnanimous gesture of paying respect to a teacher, who because of historical events was now from another country, is a testament to the fortitude and humility of the physicist who as devoted to science as he was to his faith and nationality.

This article is written by Rinchen Norbu Wangdak, edited by Sayant Mulchr. Courtesy: thebetterindia.com

Dr Abdus Salam embracing his Guru. (Source: Twitter)
Science for Peace: Salam’s Vision of S&T-led Development in the South

The debate known as the nuclear bomb- ings of Hiroshima and Nagasaki com- prise what could easily be deemed the most extraordinary and unforgettable man-made cat- astrophic event in the history of civilization. Interestingly enough, these events have a whole his- tory behind them apart from the more popular warfare and politi- cal side of their story. Those who have studied the scientific story of these events know how the thesis on the relationship of mass and energy encapsulated in a small and apparently, simple equation enabled the research that had the potential to affect huge areas of land and whatever lived and grew on it. Even Einstein, one of the brightest minds of the 20th Cen- tury and the intellectual force be- hind this equation in the beginning, had a hard time fathoming what his thesis could become within a very short span of time. Soon af- ter, with perfection of fission rea- tion by E. Fermi and L. Szillard, the world witnessed the magnitude of the impact scientific discoveries and advancements could have like never before, albeit negative in this case. It was such destruction in the Second World War that is believed to have made Einstein advocate the establishment of a supranational organization, even a proposal in this regard was also presented before the UN. While such an overarching organization was never formed to mitigate the destruction that war times can en- sure, organizations and individuals that work in the peace times to ensure well-being of societies in a number of areas remain crucial. Interestingly enough, the World Wars may not have presented the potential might of science to the world in a positive light, but they did serve to establish its potential at a much larger scale. For in- stance, as observed by the Ameri- can Federation of Labor in 1919, “... the war has brought home to all the nations engaged in it the overwhelming impor- tance of science and technology to national welfare; whether in war or in peace.” 1) That is not to say that science had been a new idea entirely, but the political vigor and enthusiasm that went into engaging scientists in the process of war, rendered the importance of science indubitable. Soon, pol- icy makers saw and advocated the need for utilizing science and technology. 2)

Soon, the relationship between science and society and develop- ment was not only apparent but strongly advocated. Science and technological discoveries and in- novations since have been revolu- tionizing processes and products in medicine industry, automation, space technology, transportation, and communication. National, regional and international scien- tific institutions and organizations have taken upon themselves, mastery and due utilization of the promise that S&T holds for the world.

There is little doubt now that nations aspiring to achieving and/ or maintaining supremacy and superiority have to concern them- selves with becoming knowledgeable economies driving all their neces- sary national and international en- deavors. The role of international institutions and organizations up- holding the cause of science for mainstreaming the ideology of S&T for peaceful uses and ena- bling relevant synergies among nations is of profound impor- tance.

The West has long embarked on investing and benefitting from this idea. A well-known example in this connection is the World Federation for Nuclear Science, Geneva, popularly known as CERN. With a dogma “Science for Peace”, the Council not only served as a means to bringing together European physics research partners, excellence, but also provides an excellent example of Science Diplomacy. It was a handful of visionary scientists who brought nations together to agreeing on and then creating such an enter- prise. The laboratories have since been bringing thousands of scien- tists together.

Similar initiatives in the South, albeit at smaller scale have been established over the later part of the twentieth century. Founded in 1964, the Abdus Salam Inte- rnational Centre for Theoretical Physics seeks to foster exchange of knowledge and cooperation in scientific education and research, providing them the stability that would help address the issues of brain drain for these countries. Salam’s prominence, apart from the Nobel Prize, comes greatly from his effective science advocacy and scientific institution building. Apart from ICTP, Salam’s advocacy of building a critical mass and fostering collaboration among developing nations, to find indigenous strengths, and sharing of resources, as well as reducing dependence from the North. While the South has a lot to gain from the organizations of the North, soul dependence can be perilous for the integrity and in many ways the security and sustenance of the developing nations. Later, I- ndia and Pakistan were entrusted with two more enterprises that would aid the scientific capacity building of the developing nations. The World Academy of Sciences (1980), and the Commission on Science and Technology for Sus- tainable Development in the South (1994).

The latter is an intergovern- mental, intergovernmental organization that has completed 25 years of operations in October 2019. Be-}

COMSATS’ Pursuing Prof. Abdus Salam’s Vision of South-South Cooperation in S&T since 1994

One of the elite organizations working for S&T-led development, the Commission on Science and Technology for Sustainable Development in the South (COMSATS) prides itself in being the brainchild of the Nobel Laureate, Prof. Abdus Salam. On his 94th Anniversary, Professor Abdus Salam is reverently remembered for his contributions to capacity-building of developing countries. His advocacy of science for development and scientific institution building resulted in a number of enterprises, such as The World Academy of Sciences (Italy), International Center for Theoretical Physics (Italy) and International Center for Physics (Colombia).

Peaceful use of and resource sharing in Science, Technology, and Innovation through Fast tracking socio-economic development and stronger more effective synergies Mobilization of necessary resources through South-South and Triangular Cooperation Capacity-building of developing countries in scientific areas of crucial importance Shaping of scientific resources for a more egalitarian society throughout the world

1) American Federation of Labor, 1919, p.15
2) “In war or in peace.” The technological promise of science following the First World War by Shaul Katzir
3) On My Participation in the Atoms Bomb Project by A. Einstein

The author of this article Farzana Suleman is a veteran Science Communicator and is a senior team member at COMSATS Secretar- iate, Islamabad. Passionate about science diplomacy and advocacy, she has academic background in Public Policy and Literature.

COMSATS has a vast experience in S&T advocacy, writing, copy editing and journal management.