

Indian American scientist's clean energy project stalled

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Bangalore: An India-born nuclear scientist in the United States who has been accused of favouritism - a charge he vehemently denies - says his research on a new kind of table-top fusion that could be a "game changer" in the area of clean energy has become the casualty of backstabbing by some of his academic peers and competitors.

Rusi Taleyarkhan, a 61-year-old professor at the Purdue University School of Nuclear Engineering, says he has become the victim of a witch hunt and is therefore in no condition to continue this particular research.

In 2008, a Purdue University committee had found Taleyarkhan guilty on two counts of research misconduct. He was accused of adding a student's name to papers to invoke a witness to the experiments and falsely stating his results as "independently" confirmed.

Although Taleyarkhan protested saying these allegations related to "trivial administrative issues" and had nothing to do with his science, Purdue University authorities penalised him by removing his endowed professorship, reducing his salary, and limiting his duties with students. He was also debarred by the US Defense Department that had funded his research.

"By targeting me for defamation and fraud, a potentially game-changing discovery for mankind has been thwarted," Taleyarkhan told IANS in an email. "My own career is in shambles for not standing down. But, that is a price I must bear for upholding the inconvenient truths for posterity."

In 2002 Taleyarkhan, then at Oak Ridge National Laboratory in Tennessee, claimed to have discovered a novel process called "acoustic inertial confinement thermonuclear fusion" that he believed might lead to a carbon-free clean-energy technology.

Dubbed "bubble fusion" or "sono-fusion", it is a table-top experiment in which sound waves are used to bombard a flask of deuterated acetone (where the hydrogen in acetone is substituted with its heavier isotope deuterium). This results in rapidly expanding bubbles that, on collapse, generate temperatures hot enough for the deuterium atoms to fuse and release energy in what was claimed a new class of room-temperature nuclear reaction.

Taleyarkhan and co-workers published the discovery in the highly respected journal Science. The India-born scientist joined Purdue University in 2003 where he continued his work until the fraud charges interrupted his work.

"My livelihood was close to being decimated on charges of fraud despite the overwhelming evidence of three successful replications, two public demonstrations, and peer-reviewed publications, including in the nuclear industry's premier scientific journal, Nuclear Engineering and Design in 2007," Taleyarkhan told IANS.

Taleyarkhan's claim of innocence has been corroborated in a report released last month by California-based journal "New Energy Times." The report, based on documents obtained under the Freedom of Information Act from three federal agencies that investigated the case, found "no evidence that Taleyarkhan had committed any science fraud or any wrongdoing." The report, on the other hand, said "the recovered documents provide confirmation of the work of Taleyarkhan and his colleagues (and) unequivocally confirmed evidence of nuclear reactions".

"Overall, our entire group stands together on the truth of the underlying science," Taleyarkhan said. "We've settled every technical challenge related to bubble nuclear fusion. However, our competitor groups prevailed by resorting to politics and brute force tactics."

He remains a professor at Purdue but the University has not rescinded most of its sanctions imposed against him in 2008 and his fusion research has been halted. When asked to comment, Purdue Public Information Director Liz Evans said in an email that "the university does not comment on issues involving pending litigation".

"In light of the above, and my responsibility to family along with the very real threat of swift reprisal and further sanctions on to me, and the impact on my children's careers, I am in no condition to become involved in bubble fusion experimentation," Taleyarkhan said. "My family has already expended over \$100,000 of our personal funds in legal fees."

Mumbai-born Taleyarkhan is a mechanical engineer from the Indian Institute of Technology-Madras. At age 24, he moved to the

United States and earned a master's degree in nuclear engineering and science, a master's degree in business and a doctorate in nuclear engineering from Rensselaer Polytechnic Institute in New York.

"The Indian American community, despite its many successes in fields of engineering, sciences, venture capitalism and medicine, is simply not united and has little to no political clout," Taleyarkhan said. "My strength comes from my family and from cherished affiliations with my group members, colleagues and students. All in all, my soul is in peace that we have stood firm on the truth of the scientific record."

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