

Purdue professor under fire for fusion claims – The university is reviewing his research.

It looks as though he might have wanted easy instant fame.

The News Sentinel
March 9, 2006

Purdue University is investigating allegations that a scientist thwarted his colleagues' efforts to test his claims of producing nuclear fusion in tabletop experiments, even going so far as to remove high-tech equipment from a shared lab.

Several Purdue researchers said Rusi Taleyarkhan, a Purdue professor of nuclear engineering, has stymied their attempts to verify — or refute — aspects of his controversial “bubble fusion” experiments since late 2003, when he joined Purdue's faculty.

In an article published online Wednesday in the journal *Nature*, they said their confidence in his work at Purdue and previously at Oak Ridge National Laboratory in Tennessee has been seriously shaken.

“I am very concerned,” Tatjana Jevremovic, a Purdue assistant professor of nuclear engineering, said in the *Nature* article.

In March 2002, a team at Oak Ridge led by Taleyarkhan published findings in the journal *Science* that excited researchers who dream of harnessing controllable nuclear fusion — the process that lights the stars — as an unlimited energy source.

But the findings were controversial at the outset. Two Oak Ridge researchers took the unusual step of publishing dissenting research saying that Taleyarkhan's work was inaccurate.

In his paper, Taleyarkhan reported producing what he said appeared to be nuclear fusion by bombarding tiny dissolved bubbles in an acetone-based solution with high-intensity sound waves.

He claimed the bubbles rapidly expanded and then collapsed, producing a brief flash of light and superhigh temperatures — a phenomenon called sonoluminescence. He also made the controversial claim that his team detected atomic particles and isotopes, suggesting that nuclear fusion may have occurred.

In the *Nature* article, Jevremovic and Lefteri Tsoukalas, who heads Purdue's School of Nuclear Engineering, said Taleyarkhan has refused to provide raw data he claims to have obtained in repeated experiments confirming signs of fusion.

Neither Jevremovic nor Tsoukalas responded to interview requests left Wednesday at their Purdue offices by The Associated Press. But they told *Nature* that they and several of their colleagues seriously question Taleyarkhan's work.

In *Nature's* article, they said that Taleyarkhan, amid growing questions about his research, moved equipment used in his experiments from the campus' communal nuclear engineering lab to his own off-campus lab in May 2004.

In addition, they said Taleyarkhan “vehemently” opposed their plans in January 2005 to publish a paper demonstrating that they could not reproduce his research.

Purdue Provost Sally Mason said in a statement that the university began a review last week of Taleyarkhan’s research and the allegations related to it.

“The research claims involved are very significant and the concerns expressed are extremely serious,” she said.

Taleyarkhan, contacted Wednesday by e-mail, referred all questions to Purdue spokeswoman Jeanne Norberg. She said Taleyarkhan was to meet with Mason and the head of an independent panel that will review the allegations. She called the matter a “professional disagreement.”

“We have people’s careers and reputations on the line here, and certainly this is very serious research and some very serious allegations,” Norberg said.

Seth Putterman, a professor of physics at the University of California, Los Angeles, who received a \$350,000 grant from the Defense Department to try to reproduce Taleyarkhan’s findings, said he has been unable to do so.

He said Taleyarkhan’s conclusions have caused people like himself to “waste time” trying to reproduce his results. But Putterman said physicists are still working to understand sonoluminescence, including what he called the unlikely possibility that it involves fusion.

“We’re not disputing the line of research. We’re disputing premature, incorrect claims of success,” he said.