

# Singapore physicist wins US short film award



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**BY ALICIA WONG - JANUARY 2**

SINGAPORE — It is a plot reminiscent of a Hollywood blockbuster: A shady quantum physics professor is called upon by two Singaporean detectives to help with a seemingly impossible task – detecting and diffusing an atomic bomb planted in a suitcase in Singapore without triggering the bomb.

Except, “unlike many Hollywood movies, what (the professor) does is based on real science confirmed experimentally,” said Associate Professor Dagomir Kaszlikowski, whose 15-minute thriller was last month selected from among more than 100 films as a top entry in a short film contest organised by the Foundational Questions Institute (FQXI) in the United States.

The institute provides philanthropic funding for research on the foundations of physics and the contest aims to bring ideas from physics to the public in an entertaining way.



Assoc Prof Kaszlikowski, Principal Investigator at the Centre for Quantum Technologies at the National University of Singapore, was among three winners. Each won a US\$10,000 prize.

In the film, titled *Seeing Without Looking*, the professor – played by real life physics professor Vlatko Vedral from the Centre for Quantum Technologies – manages to detect that there was, in fact, no bomb present without opening the suitcase. He uses a quantum technique specially designed to detect the presence of a bomb without setting off the trigger, and the film later explains this technique.

“The judging panel were unanimous in loving Dagomir’s video. It ticked all the boxes, explaining an extremely tricky subject in quantum physics, through a fictional thriller that gripped the viewers’ attention, included humour, and genuinely left you wondering how the problem could be solved – which was then clearly explained at the end,” said editor-in-chief of FQXi’s website Zeeya Merali, adding that the film was highest ranked by the FQXI community and popular with the general public.

As part of the judging, the panel, composed of physicists, outreach specialists and filmmakers, paid close attention to videos ranked highly by the general public as well as by FQXi’s professional members and the other contest entrants. Other than accuracy in physics, they considered factors such as, entertainment, how educational the film was and whether it would inspire someone to study physics.

Assoc Prof Kaszlikowski, who became a Singapore citizen in 2008, said he joined the competition “to prove to myself and to others that it is possible to make a movie that showcases real science in a cinematic way”.

Citing Christopher Nolan’s *Interstellar*, which exploits gravitational effects for a dramatic story, Assoc Prof Kaszlikowski, 43, noted that “most serious filmmakers have focused mainly on travels in space and topics inspired by the physics of large objects”, and there is hardly any movie on the “strangeness of microscopic world”.

“In the microscopic world, atoms can beat the same time in many places, cats can be alive and dead simultaneously and matter can be teleported across space. This is fascinating material that can deliver intriguing stories. If only I had Nolan’s budget...” he quipped.

Born in Poland, Assoc Prof Kaszlikowski turned to physics after his first short film in 1988 got him in trouble because “it touched upon topics that were not welcome in communist Poland at that time”. He returned to movie-making two years ago.

His short films have been short listed in several international movie festivals. Recently, his two-minute movie, *Morning Beauty*, was in the top five movies, selected from more than 100 entries, in a movie competition organised by Yahoo Singapore.

Ms Cristinel Stoica, who commented on his winning video on FQXi’s website, said it was a “very entertaining dramatisation of the Eiltsur-Vaidman bomb tester”, which is a thought experiment in quantum mechanics.