

An Extra Sense for Fire Investigators

By Samantha Malott, Daily News staff writer | Posted: Wednesday, October 21, 2015 12:00 am

Scientists from Washington State University will begin testing new sensors they hope to imbed in paint to provide more accurate information in fire and arson investigations.

Hergen Eilers, senior scientist and associate director of the WSU Institute of Shock Physics applied sciences laboratory, was recently awarded a \$517,243 grant from the Office of Justice Programs' National Institute of Justice. More than \$29 million in research was awarded to more than 60 individuals "who proposed work designed to strengthen forensic science and advance criminal justice policy and practice," according to a press release from the Department of Justice.

Eilers said the grant will begin January and is expected to continue funding for research and testing throughout the next 2 1/2 years.

Six years ago a report was released that was highly critical of forensic evidence, expert conclusions and courts accepting questionable evidence, specifically when it came to fire investigations, Eilers said. Eilers said there are guidelines fire investigators use to determine how or where a fire originated, but they can be flawed. He said in one test, 53 investigators tried to determine the origin of a fire but only 10 percent did so correctly, Eilers said.

The need for more scientific-based methodologies for investigations is where Eilers' grant will come into play.

When investigating a fire, a fire investigator will attempt to determine where and how the fire started in the structure, the temperature it reached and how long it burned, he said.

"You need to be able to figure out what the temperature was inside the explosion," Eilers said. "We are now looking at modifying these temperature sensors so they can also be used for more regular fire investigations."

The sensors are only a few micrometers in size. When exposed to heat the material changes by aligning and forming larger crystals, Eilers said. Once the change starts, a laser can be pointed at the crystals and the fluorescent light that reflects off can help determine the temperature of the fire.

"The main application we are working on right now is for paint," he said.

Funding will also help provide ways to mix the sensors into the paint without damaging the devices.

Eilers said innocent people have been convicted of arson, which is one reason the DOJ is funding the research.

"These awards support NIJ's mission to provide objective, independent, evidence-based knowledge that gives policymakers and practitioners tools to identify suspects, solve crimes and bring justice to victims and communities," NIJ Director Nancy Rodriguez said in a press release. "We want the findings from basic science to improve measurement, accuracy and methods so that forensic science can be as reliable and cost-effective as possible."

Samantha Malott can be reached at (208) 883-4639, by email to smalott@dnews.com, or on Twitter @samanthamalott.

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