

# **MEDIA RELEASE**

**NEWS FROM THE UNIVERSITY OF TASMANIA**

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ATTENTION: Chiefs of Staff, News Directors

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## **Explosive research receives \$1.6m in funding**

Pioneers of the world's first portable explosives "fingerprint" device at the University of Tasmania, have received \$1.6 million to refine research which is assisting investigations into the apprehension of terrorists responsible for bomb blasts.

Over three years, a team of nine scientists from the Australian Centre for Research on Separation Science (ACROSS), within the School of Chemistry, will develop a new briefcase-size instrument with the ability to analyse post-blast residue.

The ACROSS Portable Explosives Fingerprint device has already been evaluated by the Australian Federal Police for use in incidents similar to the Bali bombing, and has been used in simulated events conducted by the Australian Federal Police and the Australian Bomb Database Centre.

Research leader Dr Greg Dicinoski said the new device would be similar to the original but will have the ability to detect and identify explosive residues from a wide range of improvised explosive devices with little knowledge about their origins.

"After a terrorist bombing, it can often take investigators considerable time using laboratory tests to find exactly the kind of chemicals that were used to create the bomb," Dr Dicinoski said.

"With this new research we will be able to go to an incident, take a sample and analyse it via a series of different chemistries simultaneously without any prior knowledge of the sorts of explosives used," Dr Dicinoski said.

Dr Dicinoski said the improved device could give counter-terrorism authorities three distinct advantages:

- It is portable and can be taken onto most bomb sites
- Samples can be analysed on-site from miniscule levels of chemical residues
- Investigators will have the results in minutes and can start pursuing leads immediately

"This is a very exciting breakthrough for forensic science, and the possibilities are enormous," Dr Dicinoski said.

The research is funded by the National Security Science and Technology Branch through the Department of Prime Minister and Cabinet under the National Security and International Policy.

The device works on a high voltage battery, allowing scientists to separate and identify individual chemicals left in complex residues after a bomb blast. These residues form a “fingerprint” which is used to identify the chemical composition of the explosive.

Small amounts of samples for analysis are transported through narrow capillaries (75 micro-metres wide – about the diameter of three average human hairs) where chemical separation takes place under the action of a strong electrical field, a process known as capillary electrophoresis.

Currently, the technology can only analyse inorganic explosives such as nitrate, chlorate and perchlorate. The new technology will incorporate organic explosives like those used by the military, including TNT.

“This new analyser will also be able to identify the peroxide-based explosives, such as TATP, which are a form of home-made explosives that can be prepared from chemicals able to be bought at hardware stores and off the supermarket shelf,” Dr Dicoski said.

“With the new portable technology it will be possible to identify the exact composition of the homemade explosives within minutes.”

**For more information/interviews, please contact Dr Greg Dicoski on 6226 2166**

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