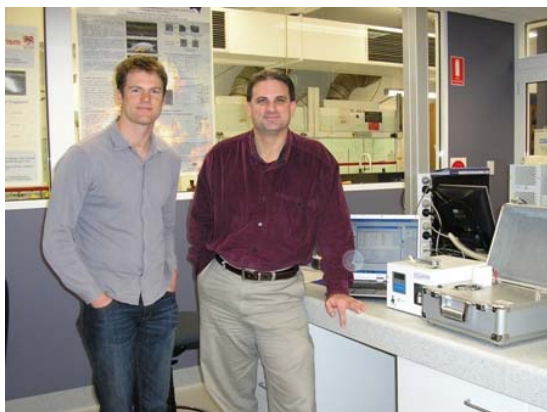


## Congratulations

Below is an edited version of the UTAS media release detailing achievements of ACROSS researchers.



*Drs Greg Dicoski and Joe Hutchinson with their device*

## New Technology will help catch terrorist bombers

In a world first, the School of Chemistry has developed a portable explosives “fingerprint” device which can process and analyse the complex chemical residues from homemade bombs in minutes. The briefcase size instrument, which works on a high voltage from a battery, allows scientists to separate and identify the individual chemicals left in complex residues after a bomb blast. These residues form a “fingerprint” which is used to identify the explosive used.

The instrument was developed by a team of ten scientists in the extensive laboratories of the Australian Centre for Research On Separation Science (ACROSS), under funding from the Research Support for Counter Terrorism Programme through the Department of Prime Minister and Cabinet, Australia. This device will add an important new dimension to forensic investigations and counter-terrorism measures.

Research leader, Dr Greg Dicoski, said the “ACROSS Portable Explosive Fingerprinter” 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

The portable analyser employs a narrow capillary (75 micro-metres wide – about the diameter of 3 average human hairs). Small amounts of samples for analysis are transported through these capillaries whereby chemical separation takes place under the action of a large potential difference (approximately 25,000 V). This process is known as capillary electrophoresis.

In the portable instrumental approach, all of the steps in the analysis are integrated and the whole process takes place inside the capillary, under the control of a computer.

Dr Dicoski estimated that the average analysis time using the new technology is up to 10 times faster than that which can be achieved with a conventional bench-top instrument. The ability to perform the analysis in the field also reduces the time required to transfer results to investigators.

“The portable system involves working with small volumes, thereby reducing the consumption of samples and reducing waste. It also provides the ability to measure very low levels of the key components in the bomb residues. This makes it easier to analyse the chemical residues and to determine with confidence the composition of homemade inorganic explosive devices” he said.

## Grants

Congratulations to: **Michael Gardiner**, who was successful in obtaining a \$9,000 Institutional Research Grant for Modelling the Reactivity of Alkali Metal Reagents; and to **Michael Breadmore, Emily Hilder** and **Robert Shellie**, who received \$85,000 Linkage grant to develop a preclinical diagnosis to test for the facial tumour disease in Tasmanian Devils.

## Annual Physics vs Chemistry Soccer Match



The annual Physics versus Chemistry soccer match kicked off at lunch time on Thursday 19<sup>th</sup> of April on the UTAS Rugby field. Physics took the lead early and managed to hold it until the half-time break. Many a stirring speech was had, and we came out hungry for goals. Physics gave away an unfortunate handball in front of goal when the ball was kicked at a player, who ended up catching it reflexively. The indirect free kick saw Boon Ng fire with pinpoint accuracy, blasting the ball through the wall and the keeper's hands to make the score one all. Next to trouble the scorers was Johnny Thabano, who dazzled the entire field with his tropical green shorts and fine shooting ability, giving the keeper no chance. Physics 1 versus Chemistry 2. Physics made a last ditch effort to snatch a draw from the jaws of defeat, when a failed cross luckily passed between our keeper's hands and the extra high rugby cross bar, levelling the scores with 10 minutes left on the clock. In immediate reply, I (Adam James) received the kick off and took the ball for a run, somehow finding myself one-on-one with the Physics keeper, he made no mistake and put Chemistry into the lead. Physics had no reply, and we won two goals to three, maintaining our long dominance on the soccer pitch with our 4<sup>th</sup> consecutive victory.

All players are to be congratulated for a fantastic effort, and a huge thanks to Physics for a great contest. See you all next year for five-in-a-row!  
(Adam James)

## "Test tube" Art!



This glass sculpture was assembled by **Amanda Shone** from the UTAS School of Art, using scrap glassware given to her from the School of Chemistry (and others). Her sculpture is on display at the School of Art, Hunter Street until 8 June.

## RACI Quiz Night

The 2007 quiz night was held on Friday 25<sup>th</sup> in the Chemistry tea room, with a record 15 teams entered! In what has to be the closest finish we've seen in our quiz nights, the 'Virtual Chemists' team snatched victory from the Metalloids by a slender margin of 0.2 points. The James Smith All-stars finished in an admirable 3<sup>rd</sup> place, with strong performances from every team this year! Featuring 11 categories, including the notorious chemistry section, the 2007 quiz challenged the intellect of all participants, and with plenty at stake, the competition was fierce! This year's 'Who Am I' individual question was taken out by Paul Haddad who was the first to correctly answer Avogadro, and in doing so won a Sanity gift voucher. Congratulations to the winning team of Brian, Nigel, Kirsty, Nathan, Rhitu and Jack who won double passes to the movies, and the prestigious Quiz Night perpetual trophy.

Many thanks to the RACI and Chemistry Club for funding the event, as well as the Chemistry School for providing the necessary facilities. We hope you all enjoyed the night, and we hope to see you again next year!

Your Hosts, Damien Stringer & Adam James