

## News Release

11 February 2013

### University of Glasgow project taps plasma power to protect products and people

Scientists at the University of Glasgow have developed a new method to make packaged food safer for consumers and more long-lived on the shelf by harnessing the germ-killing power of ozone.

Dr Declan Diver and Dr Hugh Potts of the University's School of Physics and Astronomy have prototyped a system to rapidly, safely and temporarily turn some of the oxygen inside the sealed packaging into ozone, a very effective germicide.

Plasma generated by a retractable device held briefly against the surface of plastic or glass packaging splits the bonds between oxygen molecules ( $O_2$ ) inside the packaging which then reform as ozone (or  $O_3$ ). The ozone naturally returns to its original state after just a couple of hours – more than enough time for any mould, fungi or bacteria on the packaging's contents to be destroyed without adversely affecting its taste.

The product's effectiveness as a germ-killer also extends food's shelf-life by at least one extra day, which could go a significant way to cutting down on the seven million tonnes of food discarded in the UK each year.

The product is being brought to market by a University spinout company called Anacail, which means 'shield', 'preserve' or 'protect' in Gaelic. Anacail was founded in January 2011 and has recently raised £750,000 of seed funding from leading technology commercialisation company, IP Group, and the Scottish Investment Bank, a division of Scottish Enterprise. Half of the funding is subject to satisfaction of certain technical and commercial milestones.

Anacail Chief Executive Officer Dr Ian Muirhead said: "We're very excited about the applications of our product. It's safe and easy to use, doesn't require any change in current packaging of food products to be effective, and it doesn't require any

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University  
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chemical additives – the sterilisation effect comes directly from oxygen via our plasma head.

“Although ozone can be harmful to humans, it has a very limited lifespan before it returns to oxygen and it doesn’t leave behind any dangerous residues so it’s perfectly safe to use in food decontamination. It’s a very effective way to destroy or inhibit the growth of bacteria and viruses.

“We’re currently seeking development partners to scale our product into full manufacture. Although we’re initially concentrating on offering Anacail products to the food industry, the process could be equally useful in for the sterilisation of medical and dental equipment and perhaps even for use in the home.”

The efficacy of Anacail’s prototype has been proven at leading UK test labs including Campden BRI in Gloucestershire. Tests have shown an increase in shelf-life for products including bread and muffins, and a significant reduction of many pathogens in poultry including *campylobacter*, *pseudomonas*, and *E.coli*.

Scottish Enterprise, through its Enterprise High Growth Start Up unit, has supported Anacail from the beginning of the spin-out process; contributing to its business strategy and plan; making introductions to industry experts, key suppliers and sub-contractors; and offering advice on R&D grants and financial support for the CEO Designate. The latest round of funding from the Scottish Investment Bank demonstrates that SE’s support will continue as the company develops its team, products and markets.

Anacail would also like to acknowledge STFC, EPSRC, SUPA and Glasgow University School of Physics and Astronomy for their support in this research activity.

For more information on Anacail, visit [www.anacail.com](http://www.anacail.com)

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#### About IP Group plc ([www.ipgroupplc.com](http://www.ipgroupplc.com))

IP Group is a leading UK intellectual property ("IP") commercialisation company, developing technology innovations primarily from its research intensive partner universities. The Group offers more than traditional venture capital, providing its companies with access to business building expertise, networks, recruitment and business support.

The Company's portfolio comprises holdings in over 60 companies including Oxford Nanopore Technologies, the DNA sequencing development company, Revolymmer, best known for its removable chewing gum and Xeros, which has received many accolades for its revolutionary clothes washing techniques with a much reduced requirement for water.

The portfolio includes early stage to mature businesses and has exposure to five main sectors - Energy & Renewables, Medical Equipment & Supplies, Pharma & Biotech, IT & Communications and Chemicals & Materials. To date, fifteen of the portfolio companies IP Group has backed have listed on the AIM market of the London Stock Exchange and one on ISDX.

Founded in 2001, IP Group listed on AIM in October 2003 and moved to the Official List in June 2006. The Group now has long-term partnerships with twelve core universities including those under its commercialisation agreement with Fusion IP plc.

#### About the Scottish Investment Bank

The Scottish Investment Bank is a division of Scottish Enterprise operating Scotland-wide in partnership with Highlands and Islands Enterprise. It manages a suite of funds including the Scottish Seed Fund; the Scottish Co-investment Fund; the Scottish Venture Fund; the Scottish Plastics Loan Fund and the Renewable Energy Investment Fund. It is the cornerstone investor in the privately-managed Scottish Loan Fund. These support Scotland's SME funding market to ensure businesses with growth and export potential have adequate access to capital. SIB also provides a team of financial readiness specialists to help companies prepare for new investment and more easily access finance from the private sector. See [www.scottish-enterprise.com/sib](http://www.scottish-enterprise.com/sib) for more.

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