

## SELECTIVE SCENT FOR ELECTRONIC DEVICES

A novel technique of creating electronically controlled scent delivery has been developed. The technique, which is based on small, low-cost, disposable scent cartridges, could be incorporated into a wide range of products, such as mobile telephones, games consoles, a scent clock and fashion accessories. The technology enables the selective delivery of a combination of multiple scents and, importantly, the capability of switching off the scent delivery. A solid scent storage medium is used which is inherently compatible with use in electronic equipment.

Key advantages of this technology are:

- Small (<20 mm), low drive (3.5V) scent dispersal cartridges
- Multiple scents available from single cartridge
- Exchangeable cartridges with solid scent storage
- Scent undetectable in "off" mode
- Scent selection activated by user-defined stimulus e.g. SMS arrival, alarm, voice control etc.

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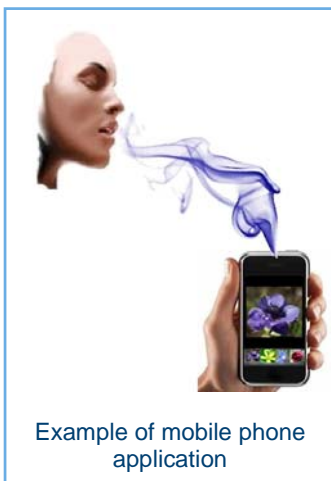
## Background

Increasingly today's consumer technology works on multiple senses of the user to enhance their experience. Typically lights, sound or movement such as vibration are harnessed to convey particular signals or messages such as mobile phone caller, sensory feedback for computer games or wellbeing. However, there has been only limited use of scent to enhance the user experience.

## Technology

The new scent dispersal system incorporates one or more storage cells, infused with an aromatic oil or similar scent. The storage medium is non-fluid and is therefore compatible with electronic systems. When heated by an electrical signal, the scent is dispersed in a controlled manner.

The scent dispersal may be triggered by a user-defined stimulus, such as voice-operated interface, push button, or external events such as a defined environmental change, an increase in the user's heart rate, phone call arrival etc. The speed of scent release is in part determined by the surface area of the storage cells.



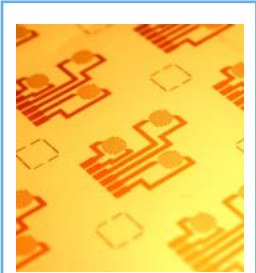
Example of mobile phone application

Where multiple scents are included, control electronics can determine what combination of scents are related to a particular event.

Any volatilisable aroma can be employed in this device, as the scent storage cells can readily be tailored without significantly affecting the production cost.

Cartridge lifetime is linked to the size and number of scent storage cells, but the aim is to achieve on the order of 100 short duration, localised uses per cartridge. The cartridge size is related to the application requirements and can be made as large or small as necessary.

The innovative design provides a low cost route for manufacture of a disposable scent releasing chip, without the need for liquid handling by the user or liquid storage within the electronic device.



Low cost, scalable cartridge design

## Commercialisation

The technology has been demonstrated as a working prototype and is ready to be focused on particular applications, according to the needs of commercial partners. The technology is protected by a UK priority patent application.

## About the Inventors

Professor Chris Lowe, Dr Colin Davidson and Dr Jenny Tillotson developed this technology in the Institute of Biotechnology at the University of Cambridge.

Professor Lowe is a well-respected leader in the field of biotechnology with over 70 patents to his name. He has been involved in multiple start-ups based on his inventions at Cambridge University. Dr Tillotson has a wealth of experience in the application of scent in fashion and wearable technologies, and is the founder of a company exploring the combination of these disciplines.