

# CITY NEWS

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## Introduction

**Welcome to this issue of 'City News'. For all of us at CitySensoriC, it has been an eventful period since the last edition, primarily because of the acquisition of our parent (First Technology) by Honeywell.**

We wrote to you at the time of the acquisition, but this newsletter provides a great opportunity to update you on some of the benefits that joining the Honeywell organisation has given us.

Elsewhere, Keith Johnson outlines our first steps in adopting Six Sigma Plus processes within the wider organisation; however, for the sales and marketing group, the immediate opportunity has been to add the 'Sixth Sense' range of sensors to our product offering. This means we are now able to combine the Sixth Sense and SensoriC gas sensor ranges under the City Technology umbrella. This gives us the widest range of gas sensors in the industry and the opportunity to offer our customers a 'one stop shop' for their gas sensing needs.

As you can see from the article on the back page, our Chicago regional hub is now fully operational and this completes our network of 4 regional hubs in Chicago, Portsmouth, Bonn and Shanghai. There are now only 2 hours in the 24 hour working day when a City Technology office is not open somewhere in the world!

We have chosen this issue to profile the work of our 'MBA' team which encompasses the Medical, Biosensing and Automotive segments. This portfolio of segments includes some exacting standards-driven challenges for our products as well as a key area of growth for us - biosensing technologies that allow our customers to monitor their employees' personal exposure to specific workplace airborne particles, in this case, enzymes. This is an example of City Technology moving into new markets which are adjacent to our core safety business - a clear strategic goal for our future growth.

**David Baldwin - Evans**  
Sales & Marketing Director  
City Technology



**“As Honeywell is a Six Sigma Plus company I am looking forward to applying some of the Six Sigma processes and tools within City Technology.”**

## In Profile Keith Johnson

**Keith is a product quality engineer working in City's quality department. He joined City as a production engineer in 1997 having gained over 12 years experience in a similar role with IBM in Havant. Within 2 years of starting at City Keith moved to the rapidly expanding quality department in the role of product quality engineer.**

Initially Keith focused on failure investigations from customer returns, in-process yields, product audit and the development of solutions and processes to overcome these problems and improve product quality. As Keith explains; “Although this process is essentially reactive and not proactive we have had significant successes in improving product quality through gaining a thorough understanding of failure mechanisms. One recent improvement we have made is with the 5-Series toxic sensors in our emissions range. By fully understanding the failure modes and the causes of these we designed the “sandwich separator” that has very significantly reduced failure rates and improved reliability and performance.”

In the last couple of years Keith has been taking a much more proactive involvement in our new product development process to ensure that quality becomes an integral component in product design. Consequently techniques such as FMEA (Failure Mode Effect Analysis) and Control Plans are routinely used as part of product development to enable us to better understand the capability of a process and products.

Keith has also been closely involved in introducing lean processes into the company and has been instrumental in developing and implementing these in both production and office environments within City Technology.

So what are the priorities for the future? Keith is very confident that as part of Honeywell we will be better placed than ever to continue to improve product quality, as he describes; “Over the last few years we have laid some excellent foundations in our processes and I am confident that as part of Honeywell we will have access to real “hands on” expertise that can build on these further. As Honeywell is a Six Sigma Plus company I am looking forward to applying some of the Six Sigma processes and tools within City Technology.”

A future article in City News will be dedicated to Six Sigma Plus.



Figure 1: Subtilisin Enzyliert™ cassette in holster



## The system comprises two components:

- A cassette containing the sample collection and assay components.
- A dedicated reader (spectrophotometer).

## Technology Enzyliert™ Biosensor

City Technology's biosensor development team are about to introduce the first biosensor product to City's product range. The Enzyliert™ is a personal dosimeter used to monitor personal exposure to enzymes used in the workplace. The first product in the family will be Enzyliert™-S for the detection of a class of protease enzymes known as subtilisins.

Subtilisins are a class of proteolytic enzymes (proteases), derived as fermentation products from 'Bacillus subtilis'. They are widely used across a range of industries, including the manufacture of laundry detergents and animal feed processing, to break down protein.

Subtilisins are known respiratory sensitizers and the threat they pose to those working with them has been recognised by many Health & Safety agencies across the world who have responded by setting occupational exposure limits at 60ng/m<sup>3</sup> or 40ng/m<sup>3</sup>. However many industries, such as detergent manufacturers, operate at much lower ceiling levels, typically less than 15ng/m<sup>3</sup>.

City Technology has developed a simple personal dosimetry system for measuring individuals' exposure to subtilisin (figure 1). The device measures collected enzyme based on an activity assay.

The device has been designed to be simple to use, require the minimum in instrumentation and technical expertise to operate and to have sufficient sensitivity to operate in environments where subtilisin concentrations are routinely below 5ng/m<sup>3</sup>.

The basic cassette (figure 1) contains a sample collection filter, reagents and a chamber in which the reaction takes place. During sampling it is worn in a holster on the lapel where air is drawn through the filter using a standard personal sampling pump (see figure 2).

Once sampling is complete the action of removing the cassette from the holster moves the filter, with collected enzyme, into a protected region to prevent contamination or loss of captured material. The cassette can be left in this state until the user is ready to perform the assay.

To perform the analysis the cassette is inserted into the reader which moves the filter into the reaction chamber and releases the reagents to initiate the assay. No separate extraction or filtering steps are required, avoiding loss of enzyme, and the analysis takes just 15 minutes.

At all times the sample and reagents are retained within the cassette and no handling of reagents or the filter are required so minimising the chance of contamination or loss of sample once collected.

The limit of detection of the device to savinase is 1ng, however it should be noted that different forms of subtilisin will have different limits of detection due to differences in their activity.

Enzyliert™ has been designed as a "platform" that can easily be adapted to monitoring exposure to a range of enzymes other than subtilisins. By changing the chemistry in the cassette it is possible to measure other enzymes such as amylase (used widely in the baking and detergent industries), xylanase (used in the paper, pulp and forest products industries) and cellulase and lipase (used in the detergent industry).

Figure 2: Cassette attached to lapel





## GE Healthcare choose City Technology oxygen sensors for Giraffe®

You could be excused for asking why giraffes require oxygen sensors? Is it to measure oxygen concentrations at their considerable height? Well in fact the answer is quite simple; the Giraffe® is a microenvironment product platform manufactured by GE Healthcare that supports the critically ill, low birth-weight infant. GE Healthcare, who already use City's oxygen sensors in its anaesthesia and respiratory products has now chosen to use our sensors in the Giraffe® product line.

The Giraffe® Platform has been developed for the NICU environment, and, currently comprises both a traditional incubator model, and, a hybrid, offering incubator and radiant warmer features and benefits within one unit. The revolutionary design was developed based on valuable insight gathered from those who know best about neonatal care, including clinicians, clinical research experts and families. Each of the integrated unique features available in the Giraffe® Platform focuses on the needs of the respective audience: the Baby Susan™ Rotating Mattress and Centralised Display provides uncompromised patient access and greater visibility to the caregiver; the Whisper Quiet™ Mode and acoustically placed alarm speaker provides the quietest and most soothing developmental environment for the patient; and the large, drop-down doors coupled, with a variable height column offers parents a clear, unobstructed view of the newborn from three sides.

This insight, together with GE Healthcare's extensive industry experience and ongoing commitment to developmental care, has helped to create one of the most user-friendly and developmentally supportive microenvironments available today.

Karsten Russell-Wood, Global Product Marketing Manager, Closed Microenvironments of GE Healthcare's Maternal-Infant Care Team explained; "Precise, and reliable oxygen delivery is critical to increasing the successful outcomes for premature infants reliant on such clinical practice within the tenuous first days of life. The choice of oxygen sensors for the Giraffe® was a critical decision, however with our experience of City's medical oxygen sensors over a number of years it was an easy decision to take. Our Maternal-Infant Care team is dedicated to increasing global awareness for prematurity, as well as constantly striving to develop innovative products for this care area. From an expectant mother's first visit to her OB office, to the days after mother and baby leave the hospital, GE's combined offering assists healthcare professionals in supporting the specialised needs of patients and families across the entire maternal-infant continuum."

## MBA Team

City Technology is pleased to announce the creation of a new customer focussed application group. The recently formed MBA team, headed by Rob White, will be responsible for the sale and the technical support of all medical, biosensor and automotive products.

Automotive products have a long history within City Technology, and as the first manufacturer of a Bureau of Automotive Repair (BAR) compliant electrochemical nitric oxide sensor, has remained at the forefront of technological developments in this market. High performance oxygen sensors have since been added to the product portfolio which has been further enhanced by the introduction of the IRidium® range of multi-gas infra-red benches. The latter are easily incorporated into tail-pipe gas analysers, rapidly providing the OEM with a simple route to a small size and high performance but affordably priced instrument.

City Technology medical oxygen sensors are used worldwide in a range of anaesthesia analysers ensuring safe levels of gas are delivered to patients in the operating theatre. If you have recently received a general anaesthetic for a surgical procedure, then there is a greater than thirty percent chance that City Technology oxygen sensors were used to ensure your safety during the operation. Furthermore, the sensors are widely used in incubator equipment assisting newly born babies as they take their first breaths.

Alongside the well established products above, the MBA team will also take responsibility for the introduction of City Technology's newest range of products to market; biosensors. These high accuracy devices allow, for the first time, personal dosimetry in areas where workers may be exposed to high levels of enzymes, such as those used in commercial detergents and washing powders. The products have only recently been introduced, but already the technology is proven in the field and customer interest is high.

Rob White, an industry specialist with many years experience in gas detection, has been recently appointed to coordinate the activities of this multidisciplinary group. Commenting on his new role, Rob said; "I have greatly looked forward to this challenge and in my first few months, I have not been disappointed. The MBA segment encompasses a large range of products at various stages within their product life cycle, which are sold to a wide variety of customers in fascinating and challenging applications. Add to that the wealth of experience of my team, I believe we are in a solid position to offer timely support and assistance to our OEM partners."



Rob White



Matt Barber



Brian Robson



Jay Thaker



## Chicago Office 'up and running'

The final piece of the jigsaw in the integration of the City Technology & Sensoric sales and marketing teams was put into place in March this year with the opening of our new office in Schaumburg in north west Chicago. The office is staffed by a team of 3, lead by Ramon Gomez, and provides full sales, product support and customer service for City Technology, Sensoric and Sixth Sense products to all our safety customers in North America.

Ramon Gomez, joined City Technology from Toyal America Inc. where he held the position of Senior Account Manager responsible for sales in the US and Mexico. As Ramon explains; "It's been an interesting and varied first few months with City Technology. In my first few weeks with City I had to move into our new office, set up communications and our business systems, start the process of recruiting the rest of the team and go to the UK for an intensive induction and product training! However now that's all behind us we are all working hard to get to know our customers in North America, no mean feat in itself as they stretch the length and breadth of the continent. The recent AIHce Expo here in Chicago along with our Launch Party and Opinion Leaders Forum gave myself, Brad and Tricia an opportunity to meet many of our customers and I look forward to meeting many more over the coming months."

Bradley Okuda and Tricia Wolf join Ramon in the North American team. Bradley, who as Product Specialist is responsible for answering technical questions and providing technical support, has a background in electronics and dialysis equipment and joins from Aksys Limited.

Tricia Wolf is responsible for customer services and will be the main point of contact for our North American customers for order placement and delivery tracking. Before joining City, Tricia worked with Ramon at Toyal America Inc. where she gained over 10 years experience in various customer service roles.

For more information and contact details for the new North American regional office please visit our website:

<http://www.citytech.com>

## City Technology Out and About

City Technology has a busy schedule of tradeshow coming up in the second half of 2006. We are exhibiting for the 6th consecutive time at MICONEX which is held in Beijing this year.

You can meet City Technology at the following trade shows in 2006

### MICONEX 13 - 16 September

Beijing, China - Exhibiting  
(Booth 8B019-20)

### AAPEX 31 October - 2 November

Las Vegas, USA -  
Exhibiting (Booth 41206)\*

### NSC 6 - 8 November

San Diego, USA -  
Attending\*

### Medica 15 - 18 November

Dusseldorf, Germany -  
Attending

\*Opinion Leaders Forums will be held at these events.

To see a complete list of events and up to date details please see:

[www.citytech.com](http://www.citytech.com)

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