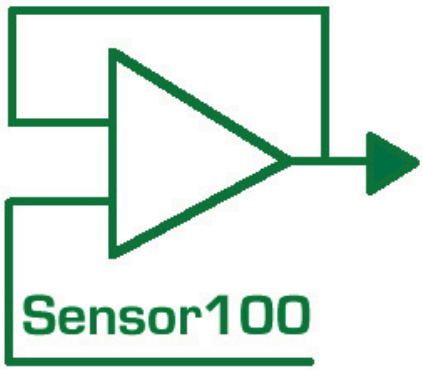
April 2017

Sensor100

The International Bio-sensor and Chemo-sensor Network

Bronze Medal
eLit Awards 2017

Linking academic, clinical and commercial worlds



News and views from the Sensor100 community

Edited by:
Michael Brand PhD SM FRSC

Sensor100's eNewsletter is published by:
Captum Capital Limited
Cumberland House
35 Park Row
Nottingham NG1 6EE
United Kingdom

Visit the Sensor100 home page: *www.sensor100.com*

Join the *Mail List* **for this free eNewsletter**

See our *Advertising Rates*

Contact us at:
info@sensor100.com

Table of contents

See Sensor100 on social media

Sensor100

Sensor100 Group

@Sensor100AgTech

@Captum_Capital

From the Editor

It has not infequently been pointed out to me that my editorials tend to reflect the glass half empty mentality, with IT, the weather, and how much work **Sensor100** is, all being common grouses. This month is different, we have some good news.

Sensor100 has been awarded the bronze medal for science in the eLit 2017 competition. eLit awards recognise electronic book publications in a wide range of categories, and I am told the competition is fierce. Many people tell me they read **Sensor100** from cover to cover each month, and I always like to hear that our efforts are appreciated by our readers. But getting third prize in an international competition adds an edge. Thanks to all the people who contribute articles and who help with the production.

One final word of apology regarding our conference dates. We work quite hard on finding really good speakers, and sometimes there are date conficts to resolve to get the people we want. For that reason we have moved SiE 17 to 20 - 21 June, and we still haven't finalised the date for SiM17; we'll announced the confirmed dates as soon as possible.

Kind regards

Michael

michael@sensor100.com

Oliver Hayden will be leaving Siemens in May to move back to academia. TranslaTUM is a new translational research center at TU Munich where he will be working with clinicians & engineers under one roof (**http://www.translatum.tum.de**). He comments: "My dream job…"

Contatct details are:
Prof. Dr. Oliver Hayden, MBA
Heinz-Nixdorf-Chair of Biomedical Electronics
TranslaTUM
Campus Klinikum rechts der Isar
Ismaninger Street 22, Building 522
81675 Munich, Germany

Cell: +49 171 95 46 945
Mail: **oliver.hayden@tum.de**

Rob van Schaijk has left imec to take up a new position at Philips Innovation Services in the MEMS Foundry.

Contact details are:
Rob van Schaijk, PhD
Principal Architect Thin Film/MEMS
MEMS Foundry, Philips Innovation Services

High Tech Campus 4 (room p.116), 5656 AE Eindhoven, The Netherlands
Email: **rob.van.schaijk@philips.com**
www.innovationservices.philips.com/mems

Sensor100 Targets Early Diagnosis of Cancer

The early diagnosis of cancer - which will affect 1 in 2 of us - dramatically increases survival rate. This suggests that research into better diagnostic tools should be an urgent priority, and indeed that is the case in the USA. Although only about 25% of the US cancer research budget is for diagnosis, there is significant activity in liquid biopsy, DNA sequencing, and machine learning to advance early stage diagnosis. Emergence of interest in diagnostic methods has been slower in Europe, with some notable exceptions. However, developing the technology is only part of the problem; it is also necessary to overcome significant regulatory and clinical hurdles to get new technology adopted into healthcare practice.

Sensor100 is undertaking three inter-related projects to advance the early diagnosis of cancer:

International Conferences

Following the **Workshop** we held in 2016, **Sensor100** will be holding a 2-day conference, **Sensors for Cancer Diagnosis,** in London in May - we will try to engage as many diagnostic technology projects as possible. Additional conferences are planned for 2018

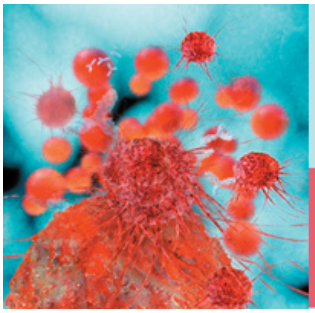
Mapping the Diagnostic Technology Space

Sensor100 plans to map the global effort in development of new cancer diagnostic tools, and use that resource to rank the relative importance of those methods in clinical oncology

Formation of the Cancer Diagnostic Network

We have launched an open innovation network intended to link global activities in cancer diagnostic developments - still in its early stages - designed to create awareness and find solutions to common problems. The CDN will have a quarterly Newsletter - see a sample of news items on **Page 9**

Whether or not you are involved in developing cancer diagnostic tools, help us promote this technology; it will benefit all of us.



Sensors for Cancer Diagnosis

22 - 23 May 2017

Royal College of Obstetricians and Gynaecologists

The Conference objective is to bring together research which can lead to the early stage diagnosis of cancer through rapid, non-invasive, precision technology.

Key Topics:

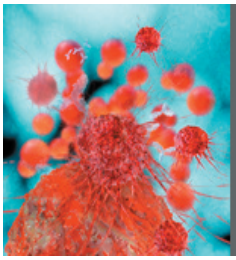
- Biosensors for molecule, protein and cell biomarkers
- Sensors for volatile organic compounds
- Liquid biopsies; sensors for CTCs
- Sequencing technology
- Biomarkers for cancer

Keynote Speakers from:
Cancer Research UK | Crick Institute | IBM Research | Imperial College Department of Bioengineering | University of Birmingham | University of Warwick
Program details

Venue
Royal College of Obstetricians and Gynaecologists
27 Sussex Pl, Regent's Park, London NW1 4RG
Directions & Accommodation

Register Now!

www.sensor100.com/SCD



Cancer Diagnostic Network

- ☑ Are you developing biosensors for cancer diagnosis?
- ☑ Do you think early diagnosis needs more recognition?
- ☑ Would it help to know who else is working on this?
- ☑ Do we need better early stage diagnostic tools?
- ☑ Can improved diagnosis enhance cancer therapy?

If you identify with any or all of these questions, join the **Cancer Diagnosis Network**, now being formed as one outcome from Sensor100's Workshop "Biosensors for Cancer Diagnosis" held in July 2016.

What will the Network do?

It will evolve as the membership grows, but to start:

- Social media presence - a virtual network
- Quarterly newsletter
- Two or more meetings/conferences a year, with reduced fees for members
- Help raise funds for an Innovation Challenge Platform to identify the most promising early stage diagnostic tools

Annual membership fees apply

Join Now!

www.sensor100.com/CDN

Tracking Unstable Chromosomes Helps Predict Lung Cancer's Return

Scientists at the Francis Crick Institute and UCL in London have found that unstable chromosomes within lung tumours increase the risk of cancer returning after surgery, and have used this new knowledge to determine the risk of relapse up to a year before the cancer returns. These are the first findings from the Cancer Research UK-funded TRACERx lung cancer study, published in the New England Journal of Medicine and Nature.

In the trial, funded by Cancer Research UK, samples were taken from the lung tumour when it was removed during surgery. A team at the Francis Crick Institute, in London, then analysed the tumour's defective DNA to build up a genetic fingerprint of each patient's cancer. Then blood tests were taken every three months after the surgery to see if tiny traces of cancer DNA re-emerged. The results, outlined in the journal Nature, showed cancer recurrence could be detected up to a year before any other method available to medicine.

Francis Crick Institute 26 April

Grail Launches Clinical Trial for Early Detection of Breast Cancer

Grail said that it has begun a clinical trial, STRIVE, for its next-generation sequencing-based blood test for early-stage cancer detection. The firm will collaborate with the Mayo Clinic and Sutter Health to enroll up to 120,000 women at the time when they receive a mammogram. The goal will be to train and validate the test.

genomeweb 20 April

Cancer Could Become as Trivial as Toothache

Danny Fortson, Tech Bubble, Sunday Times April 16, 2017

"Cancer could become boring, like going to the dentist," said Vijay Pande, who heads the $200m biotech software fund at VC Andreessen Horowitz, "you head in twice a year to have your blood tested. They may find you have zero stage cancer, you take a pill and you don't have cancer any more. That is the vision at hand."

We are quite a long way from that dream being reality, but progress is being made. Silicon Valley is throwing billions at companies leveraging machine learning to create diagnostic toolscapable of catching the disease at the outset. For example, Freenome is develping a liquid biopsy to detect in blood not just signs of cancer but whether it is malignan or benign, and where it is in the body. Grail (see pevious page) raised $900m last month to pursue ist cancer blood test.

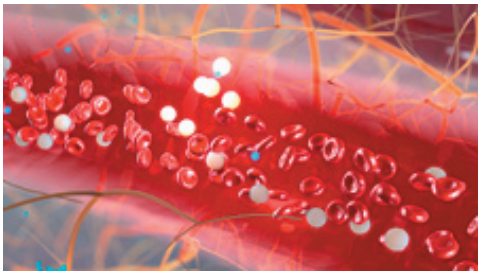
The Sunday Times, April 16

Fast Capture of Cancer Markers Will Aid in Diagnosis

Researchers at Penn State have developed nanoprobes to rapidly isolate rare markers, called extracellular vesicles (EVs), for potential development of precision cancer diagnosis and personalized anticancer treatments.

Newswise 9 April

Microfluidic Device Detects Circulating Plasma Cells



Engineers at MIT have devised a microfluidic technique to capture and count circulating plasma cells from small samples of blood. The technique, which relies on conventional blood draws, may provide patients with a less painful test for multiple myeloma.

Technology Networks 4 April

UC Berkley Bioengineers Examine Cellular Proteins

Berkeley researchers isolated circulating tumor cells from the blood of breast cancer patients, then used microscale physics to design a precision test for protein biomarkers, which are indicators of cancer. After isolating each cell, the microfluidic device breaks the cells open and tests the cellular contents for eight cancer protein biomarkers. The researchers are expanding the number of proteins identifiable with this technology to eventually allow pathologists to classify cancer cells more precisely than is possible using existing biomarkers.

ScienceDaily 24 March

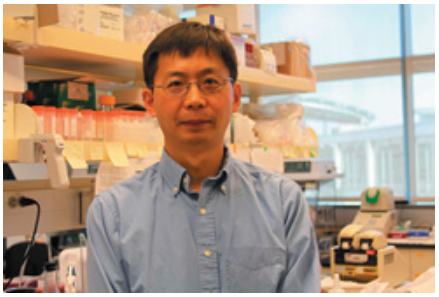
CancerLocator Tool Aims to Non-Invasively Diagnose Cancer, Pinpoint Tissue of Origin

Researchers have developed an approach to glean whether blood samples contain tumor DNA and in which tissue that tumor, if present, is located.

The approach, called CancerLocator, detects circulating cell-free DNA and uses its genome-wide DNA methylation profile to gauge if it is derived from a tumor and, if so, what tissue it originated from. The University of California, Los Angeles's Jasmine Zhou and her colleagues reported in Genome Biology that their probabilistic method was better able to distinguish cancer and non-cancer samples than random forest and support vector machine classification approaches.

Genomeweb Mar 24

Bioengineers at the University of California San Diego have developed a new blood test that could detect cancer — and locate where in the body the tumor is growing.



In this study, Prof. Kun Zhang and his team discovered a new clue in blood that could both detect tumor cells and identify where they are. When a tumor starts to take over a part of the body, it competes with normal cells for nutrients and space, killing them off in the process. As normal cells die, they release their DNA into the bloodstream — and that DNA could identify the affected tissue.

UC San Diego News Centre March 6

Sensor100 Conferences Uniquely Bridge the Research to Application Gap

To submit an Abstract please follow our **GUIDELINES**

Call for Papers

- Air, soil and water monitoring
- Sensor technology platforms
- IoT, data analysis, models
- The environment and health
- Ethical & regulatory issues

Sensors in Medicine 2017 will be limited to sensors in diabetic care and infectious disease diagnosis

Call for Papers

- Sensors for glucose monitoring
- Sensors for infectious diseases

Call for Papers

- Sensors for crop production
- Sensors for animal welfare
- IoT, data analysis, models
- PoC technology for food contaminants, pathogens
- Regulatory issues
- Commercial adoption of sensor technology

The 3rd Annual Conference will include all applications of sensors and related technology applied to environmental monitoring.

Topics will include, but are not limited to:

- Air monitoring, particularly in cities
- Effluent, fresh, sea and surface water monitoring
- Sensor networks and the IoT
- The environment and human health

Content

The Conference will include:

- Invited and submitted papers
- Posters; awards for best posters
- Exhibits of sensor technology, and service providers
- Panel discussion: "Brexit and regulatory compliance"
- Networking reception and barbecue

Call for Papers

Abstracts in the Conference format marked "Oral" or "Poster" should be submitted by 20 May to **info@sensor100.com**

Exhibition Space
Contact
info@sensor100.com

Register Now!

www.sensor100.com/SiE2017

The 5th Annual **Sensors in Medicine** Conference will take place in London in mid-September. The format for SiM17 will be slightly different from its predecessors. The two day conference will be limited to 2 topics which are the most important clinical and commercial applications of biosensors:

- Sensors for glucose monitoring and diabetes care
- Sensors for infectious disease diagnosis and monitoring

Keynote Speaker:

Professor Tony Cass
Imperial College London

As in previous years, there will be invited and contributed papers, poster displays, exhibits, panel discussions and a networking reception

Call for Papers

Abstracts in the Conference format marked "Oral" or "Poster" should be submitted by 28 July to **info@sensor100.com**

Exhibition Space
Contact
info@sensor100.com

www.sensor100.com/SiM2017

Sensors in Food and Agriculture

5 - 6 December 2017

Møller Centre Cambridge UK

The 3rd Annual **Sensors in Food and Agriculture Conference 2017** will take place at the Moller Centre, Cambridge UK on 5-6 December. The Conference will explore current applications and future developments in sensor technology for food production. Sensor networks and PoC devices are of growing importance in Agriculture and SFA2017 is the UK's leading conference on this topic. The Conference will be international in scope, reflecting the advances in sensor technology for food production in economies which are more dependent on agriculture.

As at all **Sensor100** conferences there will be a mix of invited and contributed papers, poster displays, exhibits of technology and service providers, panel discussions and a Christmas themed networking reception.

The Møller Centre provides an ideal location for the Conference, situated close to a major agricultural region of the UK, with exceptional facilities for the event and offering accommodation on-site.

Call for Papers

Abstracts in the Conference format marked "Oral" or "Poster" should be submitted by 20th October to **info@sensor100.com**

Organising Committee

Dr. Michael Brand (Sensor100) | Dr. Andrew Frame (ARM) | Dr. Eric Ober (NIAB)
Dr. Jon West (Rothamsted) | Steve Whalley (Strategic World Ventures)

Exhibition Space
Contact
info@sensor100.com

Register Now!

www.sensor100.com/SFA2017

Sensor100 Conference Exhibitors

Exhibition space is available at the Environment, Medicine and Food and Agriculture Conferences

Confirmed Exhibitors

BIODOT

KTN
the Knowledge Transfer Network

Sensor100

Zimmer & Peacock
eSensor Manufacturing and Technology

Exhibition Package

- 6ft table or equivalent floor space; 2 chairs
- 1 delegate; additional delegates at 50% registration fee
- Promotion in Conference Book & website
- 1 full page ad in Sensor100's eNewsletter
- 5 minute "elevator pitch" during conference
- Price: £800 + VAT; discounts for exhibiting at 2 or 3 conferences

Alternative sponsorship and exhibitor packages are available; contact **Sensor100** to discuss your requirements
info@sensor100.com

Coming Events

Medical Informatics World's Inaugural

Sensors for Medical Applications

Sensor Design, Engineering & Manufacturing for Integrated Healthcare Devices

May 22-23 | Boston MA USA

2017 Events Calendar

[Requires pdf reader]

Send details of events to be included in the Calendar to:

info@sensor100.com

5th INTERNATIONAL CONFERENCE ON

BIO-SENSING TECHNOLOGY

7 - 10 May 2017 | Riva del Garda (on Lake Garda), Italy

This conference will provide a forum for accessing the most up-to-date and authoritative knowledge from both commercial and academic worlds, sharing best practice in the field as well as learning about case studies of successfully integrated bio-sensing technologies. The meeting will provide an opportunity to highlight recent developments and to identify emerging and future areas of growth in this exciting field.

The conference will include:

- Presentations from leading specialists highlighting new opportunities in bio-sensing technologies
- An opportunity to share best practice in the integration of technologies for bio-sensing
- An exhibition of leading-edge, commercial technology
- A poster forum for unveiling new research ideas and concepts
- Networking opportunities
- A strong industry focus with companies presenting their technologies

Conference Chairman

Professor Richard Luxton
Institute of Bio-Sensing Technology, UWE Bristol, UK

Register Now!

Organised by

ELSEVIER IBST UWE BRISTOL University of the West of England

Supporting Publications

www.biosensingconference.com

Practicalities of Developing and Manufacturing Quantitative Assays

Lateral Flow Workshop

May 9-11, 2017 I Zaragoza, Spain

DESCRIPTION

This 3-day practical workshop, co-hosted by BioDot and OPERON, brings to life the steps between research and commercialization of quantitative assays. Lateral flow technologies are being pushed ever harder to deliver end-user benefits. This workshop keeps practitioners up-to-date.

- Learn from component and technology suppliers
- Network with fellow developers and manufacturers
- Keep up-to-date with current industry developments
- Produce a working hCG test

TOPICS

- Reagents
- Materials
- Conjugation
- Lamination
- Cutting
- Readers
- Advances in Quantification
- Troubleshooting
- Hands on Lateral Flow Practical

Produce A Working hCG Test

Dispensing, Laminating, Cutting and Testing against +ve and –ve controls

Fee:
£740/€850/$915

Includes:

- Presentations
- Practicals
- Materials for the production of a working lateral flow test
- Course book
- Conference dinner
- Lunches/refreshment breaks

Where:
Hotel Palafox
Marques de Casa Jiménez, s/n.
CP. 50004 Zaragoza (Spain)
Phone + 34 976 23 77 00
dircom@palafoxhoteles.com
mention "BioDot Workshop"

Questions:
Please contact Trish Morley
+44 (1243) 542831

Registration:
https://goo.gl/2KP9YW

Register Soon...
Registration Deadline ... April 25th

Exhibiting/Sponsorship spaces are available.
Contact: John Witton +44 (7808) 255256

BIODOT operon immuno & molecular diagnostics

Zimmer & Peacock
eSensor Manufacturing and Technology

UNIVERSITY OF CAMBRIDGE

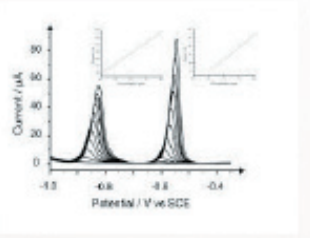
CambEchem
www.cambechem.co.uk

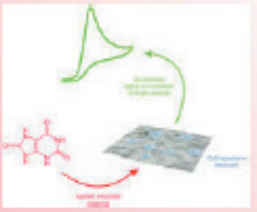
Electroanalysis Masterclass

3rd - 4th October 2017

Why Electroanalysis?

Electroanalysis are the methods underpinning all electrochemical sensors. This course will provide the attendees with the tools to develop their own electrochemical systems





Targeted

Developed by award winning industrialists and Cambridge academics, this masterclass delivers a rewarding lesson in electrochemical techniques and sensing applications.

Combining both classroom and 'hands on' learning experience, the delegate will leave with the confidence to tackle this expanding technological area.

Structure

Day 1	*Day 2*
AM: Fundamental Electrochemistry	AM: Electroanalysis at work
PM: Practical Sessions	PM: Developing your toolset

Course Fee

Early bird (prior to 1st July): Two Days £660 *(exc.VAT)*
One Day £450 *(exc.VAT)*

Paid in Advance through Zimmer and Peacock

Contact

Dr. Adrian Fisher (acf42@cam.ac.uk)

https://www.zimmerpeacocktech.com/2017/03/13/cambridge-university-electrochemical-masterclasses/

MIT is Now Offering an Innovation and Technology in Agriculture and Environment Course

The Earth's population will likely exceed 10 billion people in just a few decades, requiring an 80% increase in agricultural production. This presents an urgent need for innovative technologies to make agriculture more efficient, as well as to optimize and adapt existing processes to changing conditions. This course focuses on three fundamental areas that underpin agricultural innovation:

1. Nano/micro/global aspects of environmental impacts including climate, weather, and microbiological
2. The application of advanced technologies, such as new materials and machines, in agricultural processes
3. The use of data and modeling to improve yield by enhanced precision and predictive power using large-scale data analytics and simulation

MIT Professional Education 19 April

Miniature Liver on a Chip Could Boost US Food Safety

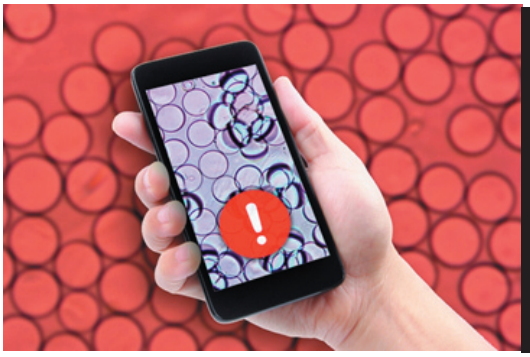
The US Food and Drug Administration (FDA) has started testing whether livers-on-a-chip — miniature models of human organs engineered to mimic biological functions — can reliably model human reactions to food and food-borne illnesses.

The chips are made by Emulate, a biotechnology company in Boston, Massachusetts. The miniature organs contain multiple types of human liver cells grown on a scaffold, and continuously pump a blood-like fluid through the system to deliver nutrients and remove waste.

Nature News 12 April

New Technology Could Offer Cheaper, Faster Food Testing

Specialized droplets interact with bacteria and can be analyzed using a smartphone.



A new safety test for foodborne pathogens is based on a novel type of liquid droplet that can bind to bacterial proteins. This interaction, which can be detected by either the naked eye or a smartphone, could offer a much faster and cheaper alternative to existing food safety tests.
Image: Jose-Luis Olivares/MIT
(droplet imes courtesy of Qifan Zhang)

The foodborne pathogen Escherichia coli O157 causes an estimated 73,000 illnesses and 60 deaths every year in the United States. Better safety tests could help avoid some of the illnesses caused by this strain of E. coli and other harmful bacteria, according to MIT researchers who have come up with a possible new solution.

The new MIT test is based on a novel type of liquid droplet that can bind to bacterial proteins. This interaction, which can be detected by either the naked eye or a smartphone, could offer a much faster and cheaper alternative to existing food safety tests.

"It's a brand new way to do sensing," says Timothy Swager, the John D. MacArthur Professor of Chemistry at MIT and the senior author of the study. "What we have here is something that can be massively cheaper, with low entry costs."

MIT News 5 April

Motorists in "Poisonous Cabin" Alert

Poor filter systems can expose drivers to vast doses of particulates from other vehicles' fumes

The Sunday Times, London, reports that drivers in even the newest cars can be exposed to very large doses of particulates if they are in heavy traffic and in a car with poor ventilation. The particulates may be as small as 23 millionths of a millimeter, but long term exposure is ahealth hazard. In the worst case, an occupant of the car could inhale 10m particles each breath.

The Sunday Times, 23 April [Registration is required to read the full article]

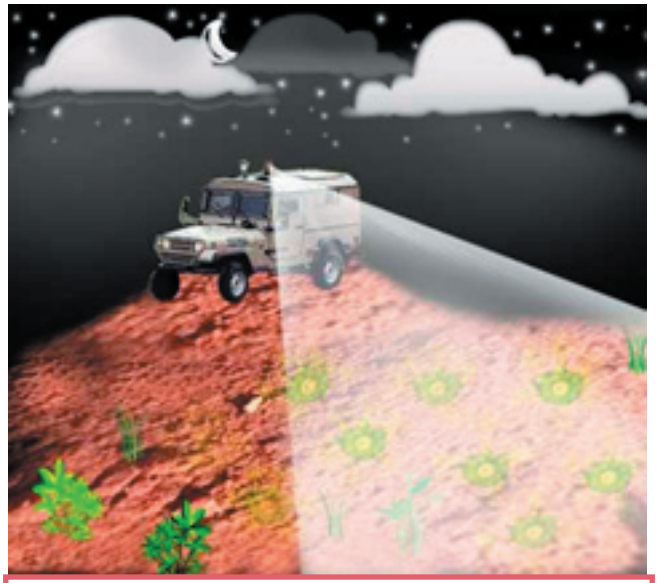
Alistair Boxall Wins 2016 Recipharm International Environmental Award

Professor Alistair Boxall of the University of York Environment Department has won the award for his research into the impact of chemical contaminants on the environment and human health. Lars Backsell, Chairman of the Board of Recipharm, commented: "Professor Boxall's work, which extends far beyond measuring concentration levels, has helped change attitudes and improve understanding of the detection, fate, effect and risks of contaminants on both human health and whole ecosystems."

University of York 4 April

Glowing Bacteria Detect Buried Landmines

Researchers remotely detect buried landmines using fluorescent bacteria encased in polymeric beads illuminated by a laser-based scanning system.



The potential application of a system developed at the Hebrew University to remotely detect buried landmines using a bacterial sensor.
(Photo credit: Hebrew University)

The need for safe and efficient technologies for detecting buried landmines and unexploded ordnance is a humanitarian issue of immense global proportions. About half a million people around the world are suffering from mine-inflicted injuries, and each year an additional 15 to 20 thousand more people are injured or killed by these devices. More than 100 million such devices are still buried in over 70 countries.

Researchers from the Hebrew University of Jerusalem now report a potential answer to this need. The system is based on the observation that all landmines leak minute quantities of explosive vapors, which accumulate in the soil above them and serve as markers for their presence. The researchers molecularly engineered live bacteria that emit a fluorescent signal when they come into contact with these vapors. This signal can be recorded and quantified from a remote location.

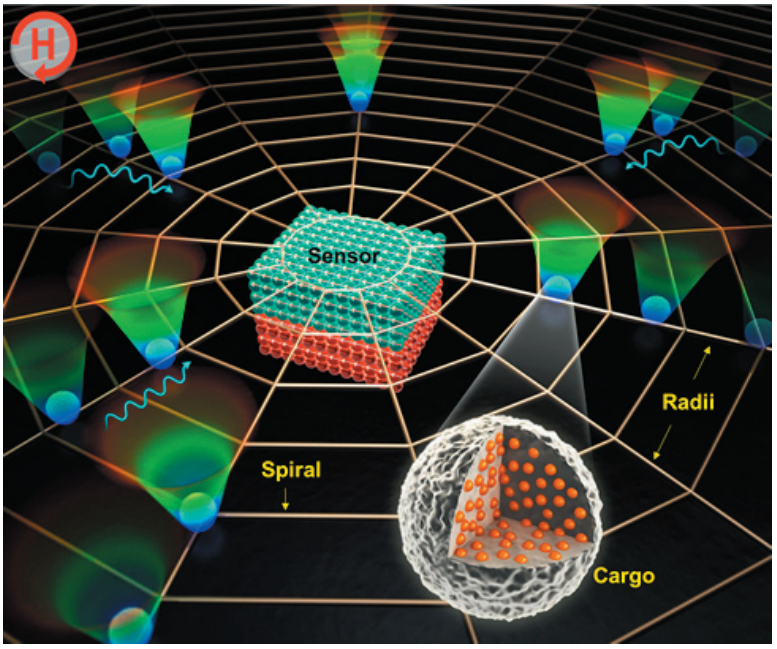
The bacteria were encapsulated in small polymeric beads, which were scattered across the surface of a test field in which real antipersonnel landmines were buried. Using a laser-based scanning system, the test field was remotely scanned and the location of the buried landmines was determined. This appear to be the first demonstration of a functional standoff landmine detection system.

The Hebrew University of Jerusalem, April 23

DGIST Develops 20 Times Faster Biosensor

A research team from Daegu Gyeongbuk Insitute of Sceince and Technology, (DGIST), Korea, has developed a biosensor platform which has 20 times faster detection capability than existing biosensors using magnetic patterns resembling a spider web.

The sensing capability of a biosensor is determined by the resolution of the sensor and the movement and reaction rate of molecules. Many research groups have been improving the resolution through the development of nanomaterials but there has been a limitation to improve the sensors' sensitivity due to the low diffusion transport of biomolcules toward the sensing region. Professor Kim and his research team used a magnetic field in order to overcome the drawback that the movement of biomolecules such as proteins and DNA is slow when the transport only depends on diffusion. The biomolecules labeled with superparamagnetic particles and the use of an external magnetic field enabled the movement of the biomolecules to be easily controlled and detected with an ultra-sensitive magnetic sensor.



DGIST PR Centre 21 April

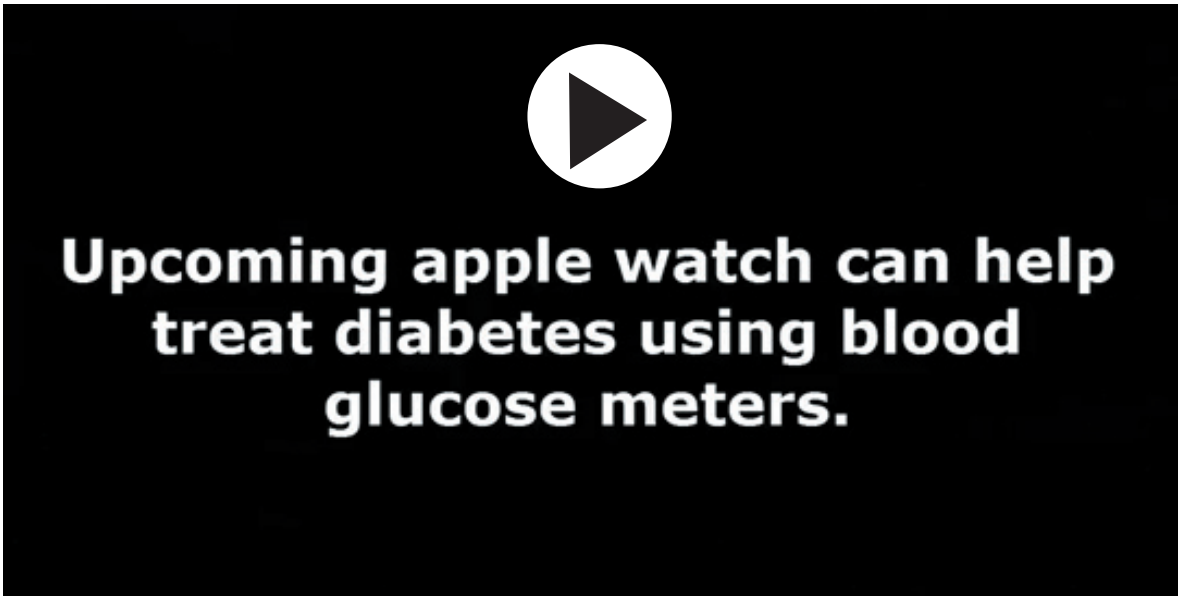
Upcoming Apple Watch Can Help Treat Diabetes Using Blood Glucose Sensor Meters

Apple has a secret team working on the holy grail for treating diabetes

Apple has hired a small team of biomedical engineers to work at a nondescript office in Palo Alto, California, miles from corporate headquarters.

They are part of a super secret initiative, initially envisioned by the late Apple co-founder Steve Jobs, to develop sensors that can noninvasively and continuously monitor blood sugar levels to better treat diabetes, according to three people familiar with the matter. The initiative is far enough along that Apple has been conducting feasibility trials at clinical sites across the Bay Area and has hired consultants to help it figure out the regulatory pathways, the people said.
CNBC 12 April

Meanwhile, June Felice Johnson, writing for Fortune Magazine, makes the point that the Apple phone won't hit the market anytime soon because of the regulatory hurdles the device must overcome.
Fortune Insiders, April 24



Video courtesy of phonetweakers

Rapid Blood Test for Malaria

Jan van den Boogaart and Oliver Hayden of Siemens Healthineers hav been nominated for the 2017 European Patent Award.

Malaria is one of the ten deadliest diseases of our time and is diagnosed in only 10% of all cases. Changing the paradigm, Dutch haematologist Jan van den Boogaart and Austrian biochemist Oliver Hayden developed the first automated, computer-based blood test for malaria. Combining medicine and information sciences, the test is based on a computer algorithm that detects infections with unprecedented accuracy.

Vote for Jan van den Boogaart and Oliver Hayden
Watch a video on **YouTube** here

Qualcomm Tricorder XPRIZE Names Two Winners

The Qualcomm Tricorder XPRIZE announced winners at a ceremony on April 12. Final Frontier Medical Devices and Dynamical Biomarkers Group were both named winners.

Final Frontier Medical Devices, a Pennsylvania-based team led by brothers Dr. Basil Harris, an emergency medicine physician, and George Harris, a network engineer, took home the 1st place, receiving $2.6M for their artificial intelligence-based engine, DxtER, that learns to diagnose medical conditions by integrating learnings from clinical emergency medicine with data analysis from actual patients. DxtER includes a group of non-invasive sensors that are designed to collect data about vital signs, body chemistry and biological functions. This information is then synthesized in the device's diagnostic engine to make a quick and accurate assessment.

XPrize 12 April

Two Pore Guys Raises $24.5M for Hand-held Dagnostic Testing Device

MobileHealthNews reports that Santa Cruz based TwoPoreGuys has raised $24.5m to further develop its hand held diagnostic platform device. the product is not yet availabe, and the company has made no announcement as to when it will be available. Two Pore Guys (2PG) develops single-molecule sensing technologies that employ solid state nanopores and biochemical reagents to create a versatile sample-in/results-out detection platform. 2PG's first product is a handheld device that can use reagents from existing molecular or analyte diagnostic assays and provide accuracy and sensitivity rivaling sophisticated laboratory equipment. The battery-operated device is ideal for point-of-use applications. The easy-to-use platform is designed to sync with a smartphone or computer for further analysis and data sharing, including integration with electronic health records.

Read more: **TwoPoreGuys**

BD Set to Acquire Bard

Becton, Dickinson and Company (BD) and C. R. Bard, Inc. announce a definitive agreement under which BD will acquire Bard for $317.00 per Bard common share in cash and stock, for a total consideration of $24 billion. The agreement has been unanimously approved by the Boards of Directors of both companies.

Sensors | Online 24 April

Mobidiag Completes €4M Funding Round

Finnish in vitro molecular diagnostics manufacturer Mobidiag has completed a €4.0 million ($4.3 million) funding round, the firm announced. The funding was supported by Finnish investment service company Kansalaisrahoitus Oy.

Mobidiag currently manufactures screening tests for detection of gastrointestinal infections, such as Clostridium difficile and bacterial gastroenteritis, as well as drug resistant organisms, on its cartridge-based multiplex PCR and microarray instruments — the high- to medium- volume Amplidiag platform and upcoming lower volume Novodiag platform. Products in its pipeline include instrument and test cassettes that take a syndromic approach, simultaneously detecting panels of bacteria, viruses, or parasites, the firm said.

Reported by: **GenomeWeb** April 18

Abbott, Alere Move Ahead With Merger, Withdraw Lawsuits

Abbott Laboratories has agreed to proceed with its purchase of diagnostics firm Alere — for $500 million less than its original price offer.

Reported by: **Med Device Online** 18 April

Theranos Accused of Setting up Secret Company

Off-the-shelf machines were used to run most of its blood tests, lawsuit claims

In the ongoing saga of Theranos,, the FT reports an allegation that the company set up a secret company, Protegic Procurement, to puchase a commercial blood analyser that was, in fact, used to run test samples intended to induce additional investment.
Reported by: **Financial Times**, 22 April

An open letter from George Whitesides

Talking on "Where from here?"

at 2nd Microfluididcs Congress: USA

Read more...

The Most Sophisticated Ring in the World.

See and feel the real-time heartbeat of your loved one wherever you are, without disturbing the other side.

This ring, which has already sold out, transmits your heartbeat to a ring worn by "your loved one" (significant other) subject to data transmission. Tap the HB ring to see your SO's heartbeat, however far apart you are. Pre-order prices are (were) £470 for a pair of rings. As well as sentimental types, the rings appeal to couples where one is in a dangerous occupation (military, police, fire dept.). Those suspicious of a partner cheating can also check on their heart-rate, although why the erring partner wouldn't simply remove the ring during moments of passion isn't clear.

The Touch: https://www.thetouchx.com/#PreOrders

Market Research Reports

Global Calorimetric Biosensor Market 2016
MRS Research Group February 2017

Chemical Sensors Market Size, Forthcoming Developments, Business Opportunities, Market Upside and Future Investments
Green Mountain Outlook April 21

United States Piezoelectric Biosensors Market: Production, Revenue, Price and Gross Margin Analysis with Forecasts to 2022
Green Mountain Outlook April 20

Sensor100
Cumberland House
35 Park Row
Nottingham NG1 6EE
United Kingdom

Sensor100