



## INTERNATIONAL OPTOELECTRONICS ASSOCIATION (IOA)

### 16<sup>TH</sup> ANNUAL MEETING

#### GENEVA SEPT 2011

Market trends and analysis from Japan, Korea, USA, & Germany covering a broad spectrum of photonic technologies.

Photovoltaic's, LEDs, Sensors, Displays and more.

The IOA meet annually to share data and trends in the photonics markets. The meeting is organised to coincide with an exhibition and this year was hosted by the Swiss Laser network in Geneva where the European Consortium on Optical Communication (ECOC) was being held.

This report highlights some of the key market data to come out of the IOA meeting.

For detailed information on the latest microprocessor developments in Japan or flat panels in Korea, telecoms in USA or lasers in Germany, please contact us for the full article.

[chris.gracie@optoelectronics.org.uk](mailto:chris.gracie@optoelectronics.org.uk)

or

[gerry.watt@electronics-scotland.com](mailto:gerry.watt@electronics-scotland.com)



The Scottish  
Government

### Summary of Findings Holyrood Briefing "STEM skills and the Scottish Economy"

Scotland's economic future success is closely aligned to having a flexible Science Technology Engineering and Mathematics (STEM) literate workforce.... Full article is available online [www.etn-uk.com](http://www.etn-uk.com)

## Technology-Inspired Innovation workshop

**Event Date: 17 November 2011 in Edinburgh**

[Register for this event](#)

This workshop will explore how you can participate in an £18 million business-orientated competition. It is aimed at companies interested in exploring how collaborative research funding can help them maximize benefits from technology developments in Sensors, Informatics (ICT), Advanced Materials, Bio-Sciences, Electronics & Photonics, and Nano-Scale technologies - and organisations with leading capabilities in these technologies.

This workshop is designed to stimulate interest from Scotland in an [£18 million Technology Inspired Competition](#).

The competition will fund collaborative research and development projects across key enabling technology areas in advanced materials; biosciences; electronics, photonics and electrical systems; information and communications technology; nanoscale technologies; and sensors and informatics.

The focus for the competition is projects where recent technological discoveries or breakthroughs have inspired people to innovate in a context of significant technology risk, or have led to ideas that are yet to find applications in a recognized market or business sector.

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## 34th Intelligent Sensing Programme (ISP) 15<sup>th</sup> Nov in Glasgow

**The ISP is a well established national forum for developers, suppliers and end-users of sensor systems and instrumentation, designed to keep you up to date with sensor technology requirements, developments, opportunities and to facilitate effective networking and knowledge exchange.**

To find out more, view the agenda and to register for this event please visit:

[www.bit.ly/sensors34thISPInGlasgow](http://www.bit.ly/sensors34thISPInGlasgow)

Confirmed speakers:

- Dr. Frank Turnbull, Honeywell  
Microsensors, their technology & application in leading global industries
  - Philip Avery, Navtech Radar  
Industrial sensing application using MMW radar
  - Dr. Joseph Z Ulanowski, Uni of Hertfordshire  
Novel optical instruments for characterizing atmospheric particulates
  - Dr. Bill Simpson and Helen Cussen, Trident Sensors Ltd  
Development of satellite tracking, communications and earth observation business from a scientific start-up
  - Prof. David Lane, Ocean Systems Laboratory, Heriot-Watt University
  - Stephen Fasham, Oxsensis  
Multi-measurand optical sensors for gas turbine combustion monitoring and other extreme environment applications
  - Dermot Rogers, FMC Technologies
  - David Lamont, British Waterways  
Seeing the wood and the trees - remote asset monitoring, an asset managers perspective
- Registration  
Tickets are priced at £35 + VAT  
To book an exhibition stand contact [shelley.sharma@espkn.org](mailto:shelley.sharma@espkn.org)  
The meeting is being held at The Grand Central Hotel, 99 Gordon Street, Glasgow, G1 3SF

N.B. Space constraints of this format mean that many articles are abridged. Full articles are available on-line or by request.



SCOTTISH TECHNOLOGY NETWORK

## M2M Connecting

### the next 50 billion

What : A free to attend, industry-led *meeting of minds* on M2M (machine-to-machine) communication.

Where : Freescale, Glasgow, G75 OTG

When : Thursday 24th November 10.00am – 3.15pm Buffet Lunch provided

How to register :

<https://getregisterednow.com/Training/Register/Register.asp?e=M2M>

The next 50 billion connections Improving health & safety, increasing security & energy efficiency.

The programme includes presentations from industry speakers, panel sessions and tabletop demonstrations showcasing advancements in M2M solutions in Service provision, Sensor, Wireless and Software technology.

Get Connected with M2M leaders – people setting the pace on technology, people providing and using M2M services today.....Sensors for Medical and Security, Digital Signage, Cloud and Network service providers, Whitespace Communications and more to come.

We have now concluded our speakers list that includes Arkessa, Neul, Oracle, McLaren, British Waterways, Speckled Computing, MPC Data, IBM, Google, Smart Sensors Ltd, Freescale, Eykona and IMS Research.

## Photonics TIC workshop in Glasgow

For those who are interested in a Photonics TIC perhaps coming to Glasgow, but could not attend the recent TSB workshop, here are some notes on the key elements of the debate.

Three Categories announced one awarded  
High Value Manufacturing  
Cell Therapies  
Offshore Renewable Energy

Categories to be selected from include;

- Complex Systems
- Digital media/creative industries
- Future cities
- Future internet systems
- Photonics
- Resource efficiency
- Sensor systems
- Smart grids and distribution
- Space
- Transport systems and integration

Three of these will be chosen. Although the TSB cannot commit to a fixed timescale they are currently working on a decision by April 2012 of which three they will progress with. They are about half way through the consultation process and if you have a particular interest in a given area there is still time to influence the decision by lobbying for your preferred category.

Following this timeline with a decision perhaps by April, then time to receive expressions of interest, followed by full applications and a two stage competition, it is likely that the earliest date for an award is circa December 2012.

.....Full article at [www.etn-uk.com](http://www.etn-uk.com)

## HR Forum

The next meeting will be held on the 6<sup>th</sup> February 2012.

Members are invited to present current company programmes associated with employee engagement. We will run a workshop to look at the various methods used to improve engagement and which measurable criteria are available to demonstrate progress. Note that this event is strictly members only.

## ECPNet

“European Photonics Clusters Networking for business”

The main goal of ECPNET is: **business development in photonics**. The project result will to reinforce Europe industry in the following fields: Energy and sustainable development, healthcare, IT, safety and security... by two principal thrusts. The first is to identify and coordinate the business development activities of European photonics clusters. The second is to promote both business synergies among photonics companies and also between SMEs and potential end users that will lead to higher market growth and shorter time-to-market for innovative products. .... More at [www.etn-uk.com](http://www.etn-uk.com)

## Nujira opens new IC design centre in Edinburgh.

**Fergus Ewing, Scottish Government Minister for Enterprise today formally opened the new IC Design Centre for Nujira at St Andrews square in Edinburgh. The minister welcomed the Cambridge based company to the Scottish technology scene and praised the efforts of SDI in securing the investment to Scotland, underscoring the attractiveness of the capital to a new breed of technology design companies.**

..... More at [www.etn-uk.com](http://www.etn-uk.com)

## European funded project investigates 11nm FinFET variability and its impact on Embedded Memories:

The FP7 funded European consortium TRAMS (Tera-scale Reliable Adaptive Memory Systems) investigates the impact of the statistical NanoCMOS variability on tera-scale embedded SRAM memories based on sub 16 nm technology generation utilising conventional and novel CMOS devices.

The statistical variability introduced by the discreteness of charge and matter has become a major obstacle to scaling and integration. The impact of this statistical variability on embedded memories is particularly dramatic, by slowing supply voltage scaling, especially for SRAM, and threatening the continuation of area scaling that helps drive integration targets for Systems on Chip.

Concerns about SRAM area and power supply scaling are major drivers behind the revolutionary introduction of FinFET devices. TRAMS is striving to understand the implication of FinFET technology on the continuation of CMOS scaling as projected by Moore's law.

This year TRAMS completed an important milestone by analysing in minute detail the statistical variability in a 10 nm channel length FinFETs on SOI substrate using advanced statistical TCAD simulation. The FinFETs are carefully designed to fulfil the ITRS requirements for the 11 nm CMOS technology generation. The simulations have been carried out using unique simulation technology available to the project that takes into account the major known sources of statistical variability and reliability, including random discrete dopants, the gate and the fin line edge roughness, the metal gate variability and bias temperature instability effects (e.g., NBTI/PBTI). The results of the physical simulations have been captured in accurate statistical compact models by the TRAMS partners. These models are being used to evaluate the impact of statistical FinFET variability on 11nm embedded memory design and to develop circuit and system countermeasures that will make future embedded memories resilient to statistical variability and reliability.