Green Photonics Conference

19th October 2010

The Welsh Opto-Electronics Forum

Enabling Green Photonics

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Presentation Format

- The Welsh Optoelectronics Forum
  - Key Roles and Activities
  - The shape of the industry in Wales
- What is Green Photonics?
  - Green activities
  - Achievements
- Next Steps?

The Welsh Opto-Electronics Forum

- **Established in 1996**
  with demonstrated success to date
- **Consortium of companies and university groups**
  that pay membership fees
- **Dedicated to the**
  development and profitability of the sector in Wales
- **Facilitated by** *a voluntary, elected committee*
- **Initially encouraged and supported by the Public Sector**
  now fully operated by the Private Sector

The Welsh Opto-Electronics Forum - an engine for economic growth in Wales

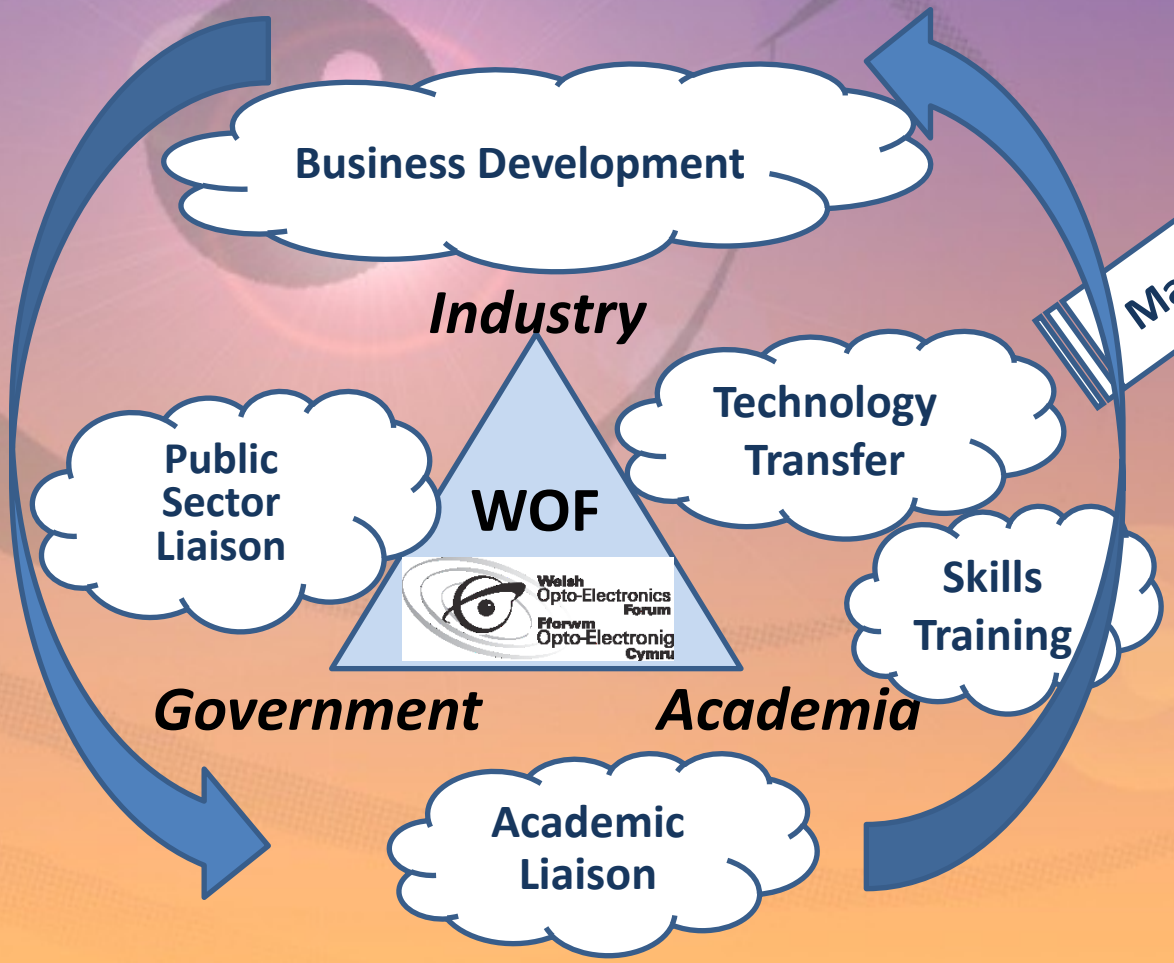
VISION:

"That the forum will provide a vehicle which will enable opto-electronics businesses in Wales to be world class leaders in their chosen specialist area of expertise; resulting in Wales being recognised as a centre of excellence in opto-electronics".

MISSION:

"To stimulate the growth and competitiveness of the Opto-Electronics sector in Wales"

KEY ROLES & ACTIVITIES



- Business Development
- Technology Transfer
- Skills Training & Education
- Public Sector & Academic Liaison
- Sector Marketing /Cluster Development
- Networking – Local, National & International Links

Key Strengths

- **Breadth of Opto-electronics Technology capability**
- **Significant strengths in a number of areas through both University and Commercial capability,** (specialist optics, opto-electronic materials, fibre optics and optical telecomms, semiconductors for photonics, microsystems)
- **Strengths across the supply chain**
  materials → components → systems → equipment
- **Solid growth in Total Annual Revenues: estimated at £800m in 2009 of which 60% comes from exports**
- **Slower growth in numbers employed as manufacturing efficiency improves: estimated at around 6,000 in 2009**

WHAT IS GREEN PHOTONICS?

Photonics solutions that:

- **Generate Energy;**
- **Conserve Energy;**
- **Cut Greenhouse Gas emissions;**
- **Reduce Pollution;**
- **Yield environmentally sustainable outputs;**
- **Improve Public Health.**

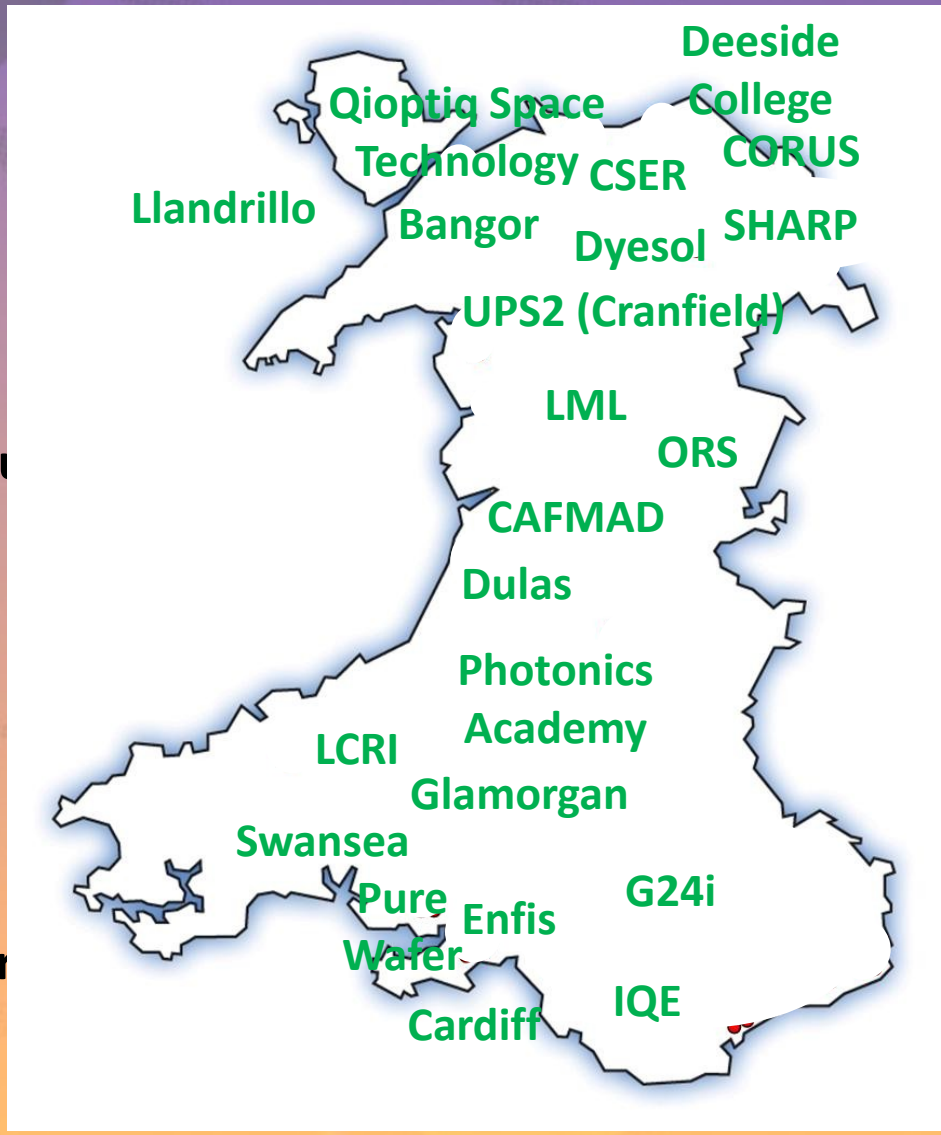
Photonics21 "Lighting the way ahead"; January 2010

WHAT ARE THE ISSUES?

- Need for new materials;
- Energy reduction techniques;
- Energy efficiency in data networks;
- Improved product design – performance; lifetime; disposal;
- Sustainable manufacture – processing tools and sensors;
- Education and Training.

SO HOW GREEN ARE WE?

- Generate Energy;
- Conserve Energy;
- Cut Greenhouse Gas emissions;
- Reduce Pollution;
- Yield environmentally sustainable outpu
- Improve Public Health.
- Need for new materials;
- Energy reduction techniques;
- Energy efficiency in data networks;
- Improved product design;
- Sustainable manufacture – tools/sensor
- Education and Training.



MAJOR ACHIEVEMENTS TO DATE

- Creation of a chair of Opto-electronic Materials Chemistry. This has now developed into the Centre for Solar Energy Research based at OpTIC;
- The concept for and creation of OpTIC;
- Conception and launch of Photonics Academy – delivering the "MAGICAL HOME", an educational initiative for primary schools;
- Successful lobbying in support of national academic programmes:
  - HiPER; CAFMAD; IKC…
- Sponsorship and support for the Wales PV road map – 2006 & 2008;
- Support for the UK PV Solar Energy Road Map;
- Seminars and meeting organisation:
  - Plastic Electronics 2006; Organic Electronics and Solar Cells 2007…..
- National recognition as an outstanding example of Best Practice in Cluster organisation and delivery:
  - ECO Photonics, Strasbourg 2011; Optics, Munich 2011

NEXT STEPS? - ENABLING THE GREEN AGENDA

Industry

Better understanding of Needs and Opportunities: Product Design Process Development

Dialogue on Setting Priorities - Research Funding and Targets

WOF

Welsh Opto-Electronics Forum
Fforwm Opto-Electronig Cymru

Focus on the development and delivery of Green Research and Education

Government

Academia

NEXT STEPS?

Sector Sustainability & Growth Project (2010 – 2012)

- **Sector Marketing**
  - *Promotion of Best Practice*
- **Supply Chain Market Research**
  - *Practical guidelines and advice*
- **Technical Workshops and Master Classes**
  - *Awareness and development of capability*
- **Collaborative Technology Platforms**
  - *Next generation management of new products and markets*

Thank You!