UK Opportunity and Funding

Dr John Lincoln
Chief Executive, Photonics Leadership Group,
Industrial Liaison, The Future Photonics Hub,
Director Harlin Ltd

The Chalcogenide Advanced Manufacturing Partnership
Industry Strategy - Why Care?

• Steer/direct/influence government investment to 2021+
  • All funding agencies
    • Innovate, EPSRC, UK Research and Innovation UKRI, LEPs

• Covers
  • Prioritise
  • Rules of engagement
  • Framework for support/ cash
  • Specifics interventions
    • New funding

• National productivity infrastructure fund
  • Extra £425million 2017, £2billion in 2020,
    • Innovate,
    • UKRI
    • Industrial strategy challenge fund – New

WHY?
Industry deliver growth
Whilst gov delivers BREXIT
Key elements – 10 Pillars

- Not all pillars have equal weight
  - Impact
  - Attention

Emerging ‘top’ priorities
- Productivity
- Place
- People

- Investing in Science, Research & Innovation
- Developing skills
- Upgrading infrastructure
- Supporting business to start and grow
- Improving Procurement
- Encouraging trade & inward investment
- Delivering affordable energy & clean growth
- Cultivating world-leading sectors
- Driving growth across whole country
- Creating the right institutions to bring together sectors & places
Industry Strategy Challenge Fund

• >£4bn new money, £2bn/yr by 2020
  • Focused on industry – Academic collaboration
  • 5 year plus impact, substantial £
  • Invested/ announced in waves
    • Wave 1 - add £ to previously submitted projects
    • Wave 2 – consultation with industry Jan 2017
      • Predefined challenges
      • Announcement expected in November
    • Wave 3
      • How to get relevant challenges on agenda?

ISCF Wave 1

- £246m Batteries – Faraday challenge
- £197m Accelerating innovative medicines
- £93 Robotics and AI for harsh environments
- £38m Driverless cars R&D
- £26m Composites for aerospace automotive
- £99 Satellite test facility

ISCF Wave 2

- Bioscience & biotech – for food energy, material production.
- Manufacturing and Materials - manuf of next gen products
- Quantum tech – sub-surface imaging, GPS free
- Transformative digital tech - data, AI, security, HPC, 5G, modelling
Sector deals

“Government will work with sectors that organise themselves behind strong leadership to help deliver upgrades in productivity”

• Can cover regulation, competition, commercialisation, institutions, policy......

• Separate process to ISCF
  • Focus on unlocking near-term growth
  • No new money

• 5-6 preordained in Industrial strategy
  • Nuclear, Creative industries, Life-sciences, Low emission vehicles adoption +
  • Industrial digitization -
    • Focus on productivity
    • Led by Siemens
    • Digital innovation hubs....

http://industrialdigitalisation.org.uk/
MoD Science and Technology strategy - Why Care?

• Steer/direct/influence government investment to 2021+
• Covers
  • Upstream into policy / decision making
  • Downstream developing capability
    • Capabilities, enablers, systems
  • Research Prioritise to accelerating implementation
• Key technologies
  • Machine learning, quantum, advanced/novel materials, autonomy, synthetic biology, data science etc

“Every S&T project will require a clear case articulating benefit to defence”

“strategic and high-risk, high-reward S&T”
SERAPIS

• New funding framework for dstl to access low TRL innovation
• £200million across 6 Lots
  • To prime to distribute to specific project.

• Focus on low TRL low classification innovation
  • Compliment to other frameworks e.g. R-Cloud
• In place Jan 2019
Impact on Innovate

• Five regular 6 monthly innovation calls remain.
  • Open, Infrastructure, Health & Lifescience, Emerging and enabling, Manufacturing & Materials

• Expect enhanced £ around
  • Productivity/ industrial digitisation
  • ISCF challenges e.g.
    • Robotics for harsh environments
    • Faraday challenge – batteries
    • Autonomous vehicles
    • Satellite test
  • In targeted competitions, foci in innovation calls.

• Loans in pilot to augment grants
Impact on EPSRC & RCUK

• Increase support for manufacturing the future theme
• Increased alignment to industry strategy
  • Impact on productivity, people place.
• Greater collaboration / joint calls with Innovate around industry strategy challenge fund
  • >50% of ISCF £ to go via research councils
## Grand Photonics challenges

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordable, accurate location information</td>
<td>Overcoming security threats and enabling autonomous vehicles with instantaneous awareness of rapidly changing local surroundings</td>
</tr>
<tr>
<td>Delivering Internet 5.0,</td>
<td>Where data delivery is ubiquitous, invisible and instantaneous to all people and all factories, no matter where they are or what they are doing</td>
</tr>
<tr>
<td>Enabling UK manufacture of the car of the future,</td>
<td>Using light to digitally process, monitor and control cutting, joining, marking and assembly for lighter weight, safer, more efficient vehicles</td>
</tr>
<tr>
<td>Making home healthcare as effective as hospital care by 2030,</td>
<td>Providing simple pre-clinical diagnoses and health screening tools for use in the home and pharmacy, decreasing the load on primary and hospital</td>
</tr>
</tbody>
</table>
Photonics Leadership Group

Bring together industry, academia, support agencies and government

Making UK Photonics bigger, faster, stronger

www.photonicsuk.org
www.photonicshub.org
www.chalcogenide.net
@johnrlincoln

UK has world leading photonics industry
Stand tall be Proud

Prepared with the support of the Future Photonics Hub and over 60 regular PLG participants from across industry and academia