

Innovation in Engineering - An Academic Perspective

Prof. Frank Coton



The Faculty of Engineering



UNIVERSITY
of
GLASGOW

Is Innovation Alive in Academia?

Now

- **Blue Skies Research**
- **Innovative working relationships**
- **Technology Spin-outs**

The Future

- **A new framework for University collaborative research in Scotland**



The Faculty of Engineering

Innovative working relationships

The *SPEED* Consortium

- For 20 years SPEED (Scottish Power Electronics and Electric Drives) has worked with the world's major manufacturers across a wide range of industrial sectors.
- The application areas include domestic appliances, aerospace, automotive and office machinery.



Innovative working relationships

The *SPEED* Consortium



- The consortium has grown to around 60 members who are given licenses to SPEED software - the industry's leading software tool for electric motor design
- Over 800 SPEED users can call on a technical enquiry service that is maintained by a team of experts almost constantly.
- Members of the consortium include Caterpillar Inc., General Electric Company, Robert Bosch GmbH and Rolls Royce plc.



Technology Spin-Outs

- The University has entered a strategic partnership with research commercialisation specialists IP Group plc.
- In the 25 year partnership the IP Group will initially make £5M available to accelerate University of Glasgow spinout projects towards the marketplace.
- The advantages of the partnership means the University has fast access to seed funds, rapid commercial evaluation and decision-making on spinout opportunities, increased post-incorporation support and access to IP Group's network of follow-on investors.



Spin-Out Examples



- Created in 1997 to facilitate commercialisation of the world-class technology and expertise in the Department of Electronics and Electrical Engineering.
- KNT provides the complete set of semiconductor fabrication & processing tools operated by an experienced team of researchers, making it an excellent choice to subcontract the R&D needs of SMEs, large companies and Universities across the world.



Spin-Out Examples

intense

- Spun out of the University in 1999.
- Intense now employs over 80 people.
- They offer a range of optoelectronic solutions, working with key customers in the printing, telecoms and defence market sectors.
- Despite uncertainties in the telecoms sector, Intense has survived by adapting and diversifying into other markets.



Spin-Out Examples



- Set up to commercialise wireless sensor technology for use in medical diagnostics.
- This is the first spin-out supported by IP Group plc since the University announced the partnership in 2006.
- The first product, an electronic pill that can detect the early signs of bowel cancer, based on technology designed by staff in the Dept of Electronic & Electrical Engineering, is to be developed thanks to investment by IP Group plc.



Just Spinning Out.....



- A spin-out project building on world-leading experience in compound semiconductors over the last 20 years.
- It is being founded to commercialise 50 nm GaAs mHEMT technology which currently holds the world record for the highest frequency, lowest noise transistors (fT 440GHz).
- Using the state-of-the-art fabrication facilities at the University, the company will design and manufacture MMICs operating in the frequency band 50GHz-500GHz.



Just Spinning Out.....

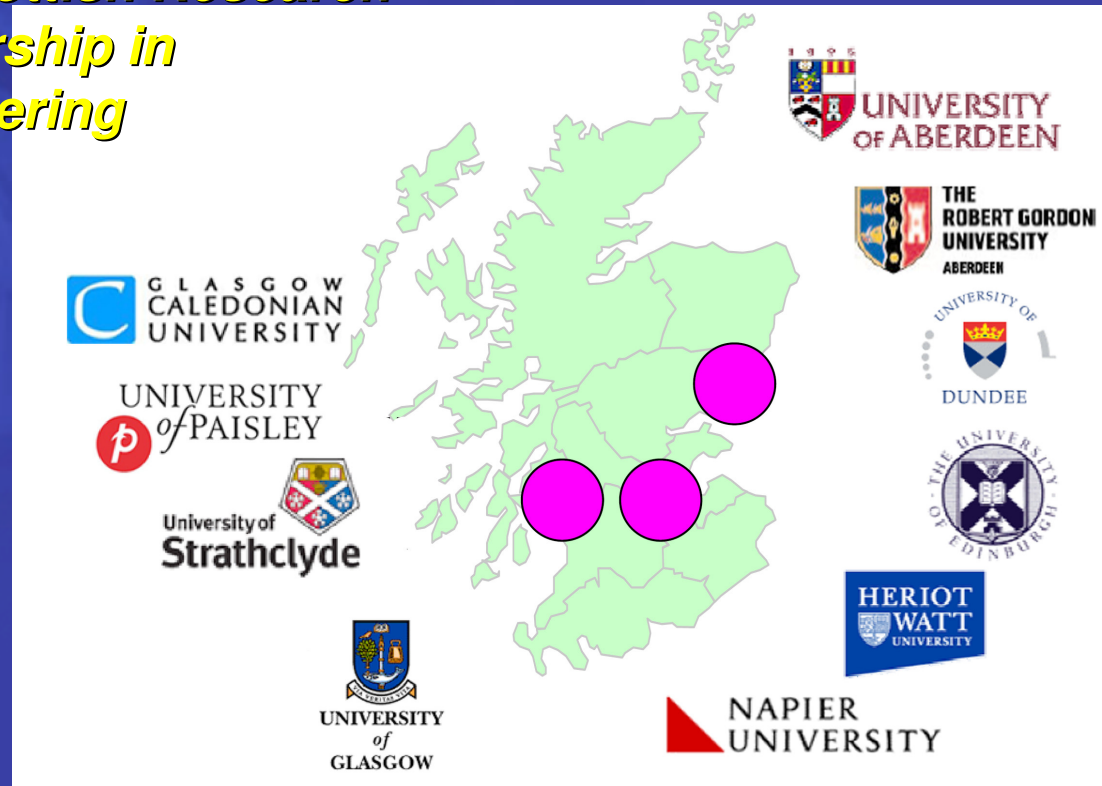


- Xanic aims to be Europe's leading supplier of commercial high-frequency components for the following applications:
 - **Homeland Security Scanners** - Portal security scanners, Stand-off security cameras for public places, Handheld detectors for police and special forces
 - **Communications** - Next generation combat radio, Optical and broadband microwave communications
 - **Imaging & Sensors** - Missile sensors, Radio astronomy, Environmental sensing, Explosives, Medical imaging
 - **New Applications** - Automotive collision avoidance radar, Airport runway debris detection, Helicopter & aircraft blind landing systems



A New Framework for University Based Research in Scotland

The Scottish Research Partnership in Engineering



The Faculty of Engineering



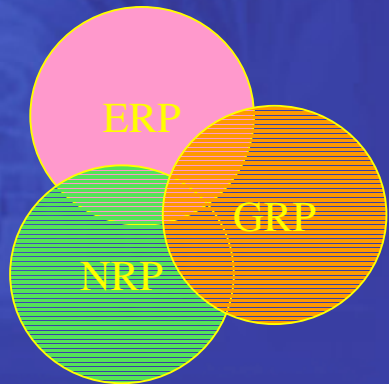
A New Framework for University Based Research in Scotland

- The Scottish Universities are ambitious
 - To improve research standards
 - Attain international excellence
 - Raise the profile of Engineering in Scotland
- Research pooling will establish excellence and critical mass in key strategic areas



The Faculty of Engineering

A New Framework for University Based Research in Scotland



- The Edinburgh Research Partnership (ERP)**

- oEdinburgh University
- oHeriot-Watt University
- oNapier University.

- The Glasgow Research Partnership (GRP)**

- oGlasgow University
- oGlasgow Caledonian University
- oStrathclyde University
- oPaisley University

- The Northern Research Partnership (NRP)**

- oAberdeen University
- oDundee University
- oRobert Gordon's University



The Faculty of Engineering



UNIVERSITY
of
GLASGOW

The Glasgow Research Partnership in Engineering



UNIVERSITY
of
GLASGOW



THE
UNIVERSITY OF
STRATHCLYDE
IN GLASGOW

UNIVERSITY
of PAISLEY

GLASGOW
CALEDONIAN
UNIVERSITY



The Faculty of Engineering



UNIVERSITY
of
GLASGOW

The Glasgow Research Partnership in Engineering

- An Engineering Research Collaboration, led by the Universities of Glasgow and Strathclyde and supported by investment of around £32M.
- The GRP will establish critical mass of research excellence in key strategic areas of Engineering.
- It will confirm the West of Scotland as a major world centre for Engineering in the face of increased levels of competition from both within and outwith the UK.



The Faculty of Engineering

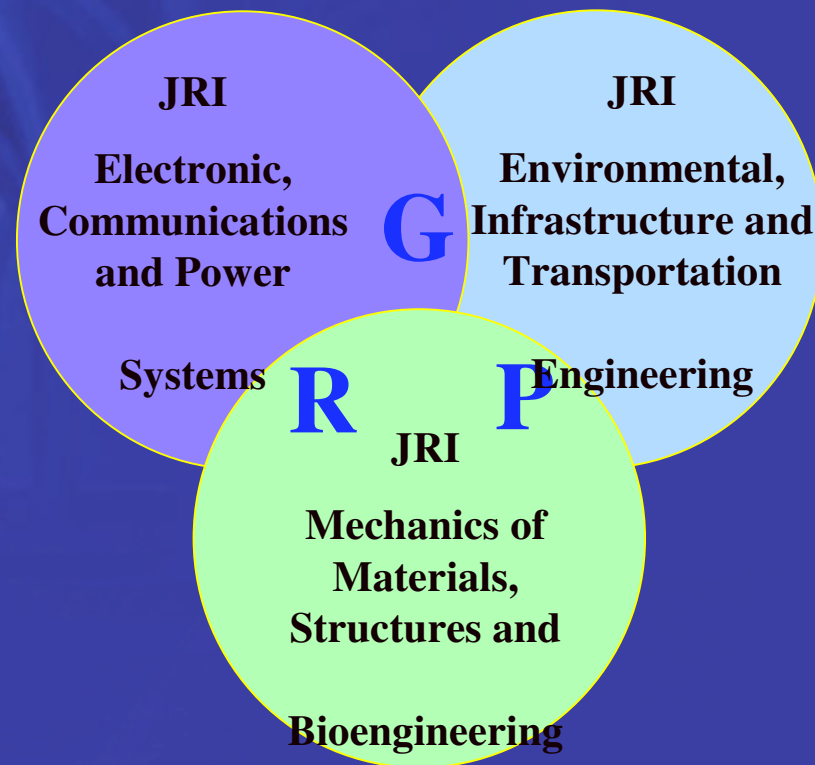
The Glasgow Research Partnership in Engineering

- Create a research environment (and identity) that will attract world-class researchers to the West of Scotland
- Stimulate growth in the regional and national economy through technology transfer activities
- Develop a collaborative approach to the establishment of a modern research infrastructure to enable new and existing resources to be used more efficiently



The Faculty of Engineering

The GRP Research Institutes

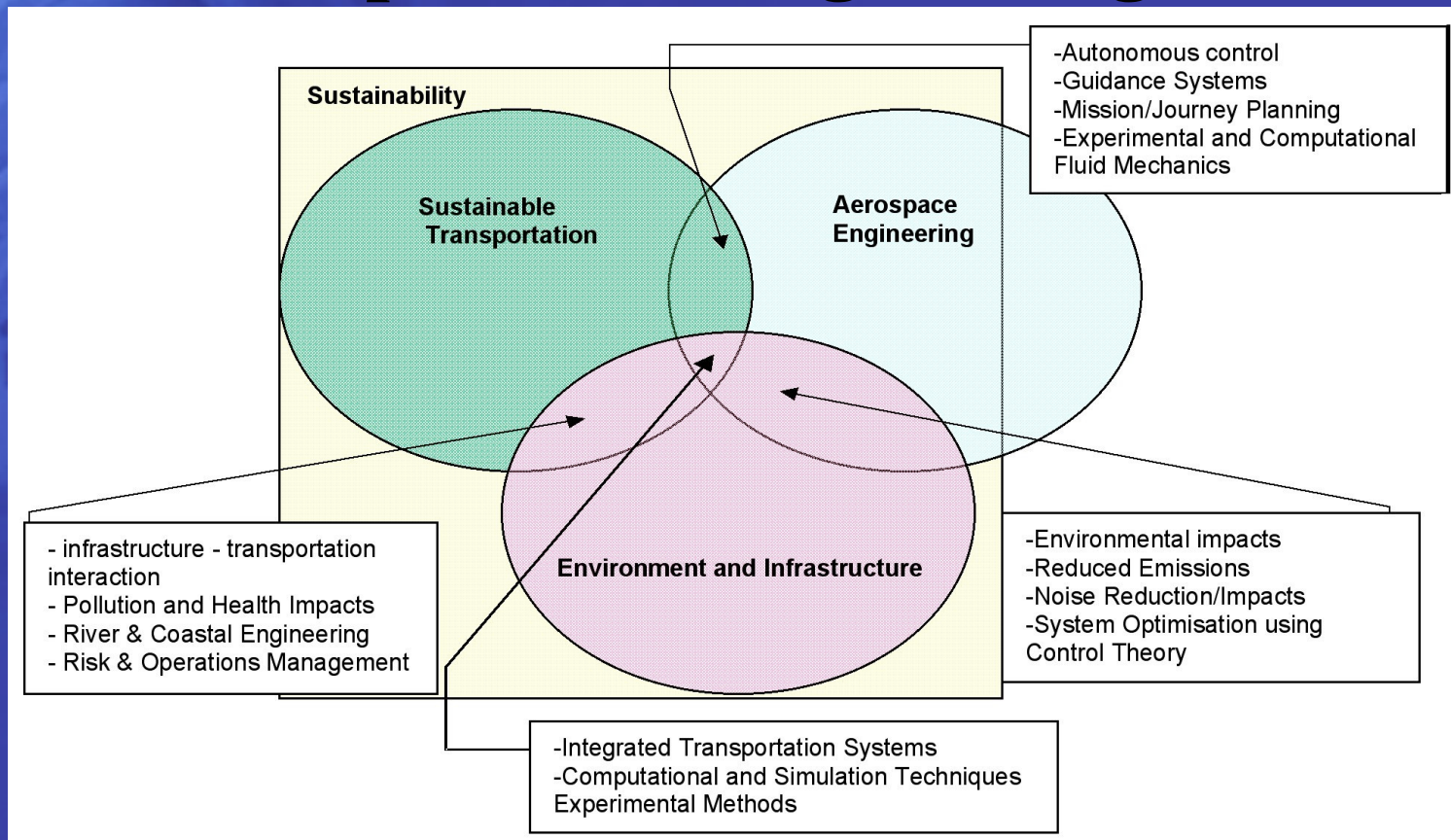


The Faculty of Engineering



UNIVERSITY
of
GLASGOW

JRI in Environmental, Infrastructure and Transportation Engineering



Thank you for your attention



The Faculty of Engineering



UNIVERSITY
of
GLASGOW