



The Royal Academy of Engineering

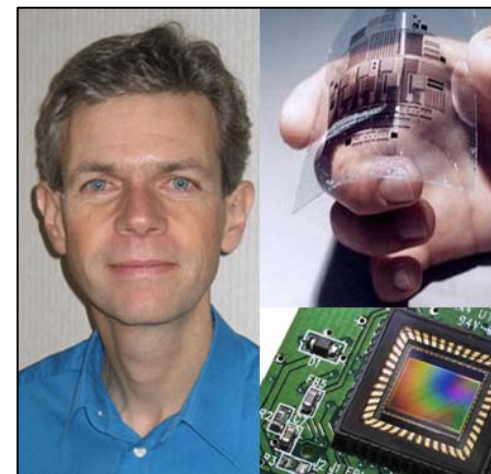
Senior Research Fellowship

e-Agri

Co-funded by Syngenta Agribusiness www.syngenta.com

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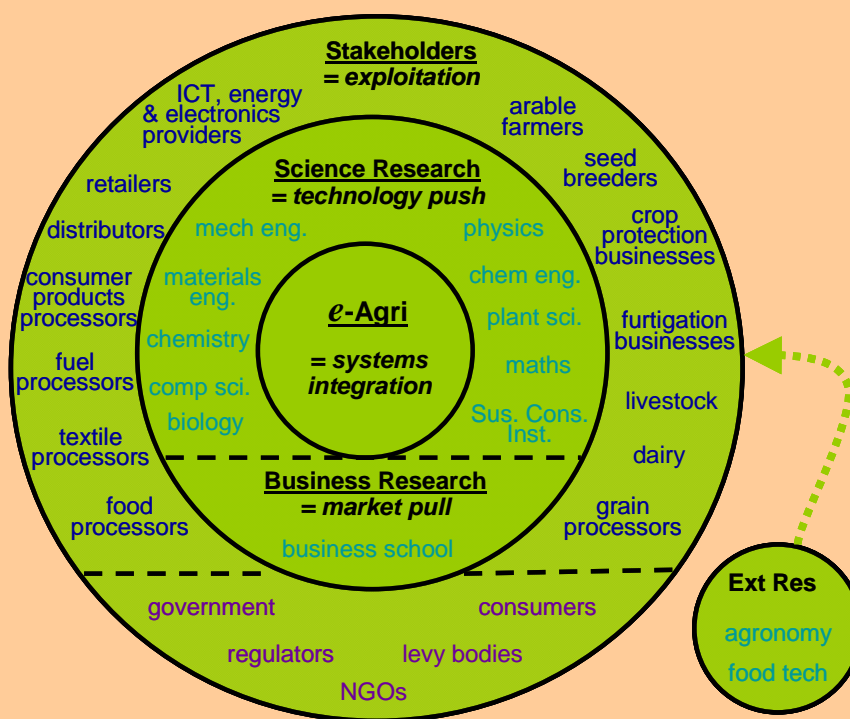


Changing the rules of the Game for Global Food & Energy Security

- MOTIVATION: Food & Crop challenges ...
 - Climate change: drought in 2007 affected many countries and led to supply shortages. A wet summer in Western Europe led to disease pressure and reduced yield
 - Water scarcity: impacts millions of people in Asia, the Middle East and North Africa. Agriculture currently uses 70% of total global freshwater
 - Limited land: few countries have more land available for agriculture. Modernisation in places such as Eastern Europe will help produce more food from available land
 - Population demographics: The World Bank predicts that global populations will increase from 6.5B today to over 9B by 2050. In parallel, increasing personal wealth is favouring high protein diets requiring up to ten times the arable land as the equivalent calories from a vegetarian diet.
 - ... but further yield increases are possible
- STORY SO FAR: Syngenta Sensors University Innovation Centre at Manchester
 - RFID-sensors for the perishable produce supply chain
 - Integrating farm produce with food / sustainable-fuel processing
 - Early fungal pathogen sensing for yield recovery
 - Subsoil root-function imaging for drought tolerance
- THE FUTURE: A 5 year strategy for broadening the concept to the whole of Agri-Food, centred upon leading edge ICT and electronics research and encompassing the parallel enabling physical sciences

www.eee.manchester.ac.uk

www.e-agri.blogspot.com



Conclusion

The *e-Agri* concept is a wholly unique new ICT and electronic engineering approach to help tackle the challenges for **Agriculture & Food Security** in the face of **Population Growth** and **Climate Change**. It builds upon the industry-university partnership first created between Syngenta, Manchester and the Academy and supports Government strategy and the forthcoming TSB Innovation Platforms. New research partnership from across Agri-Food industries and research institutions must now be nurtured to make *e-Agri* a real solution to sustainably meeting the demands of our future generations. **Can your research be part of this?**

