

How to make **ATTRACT** sustainable in the longer run?

An industrial perspective

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JOURNALS OF MATERIAL SCIENCE 29 (1994) 4993-4998

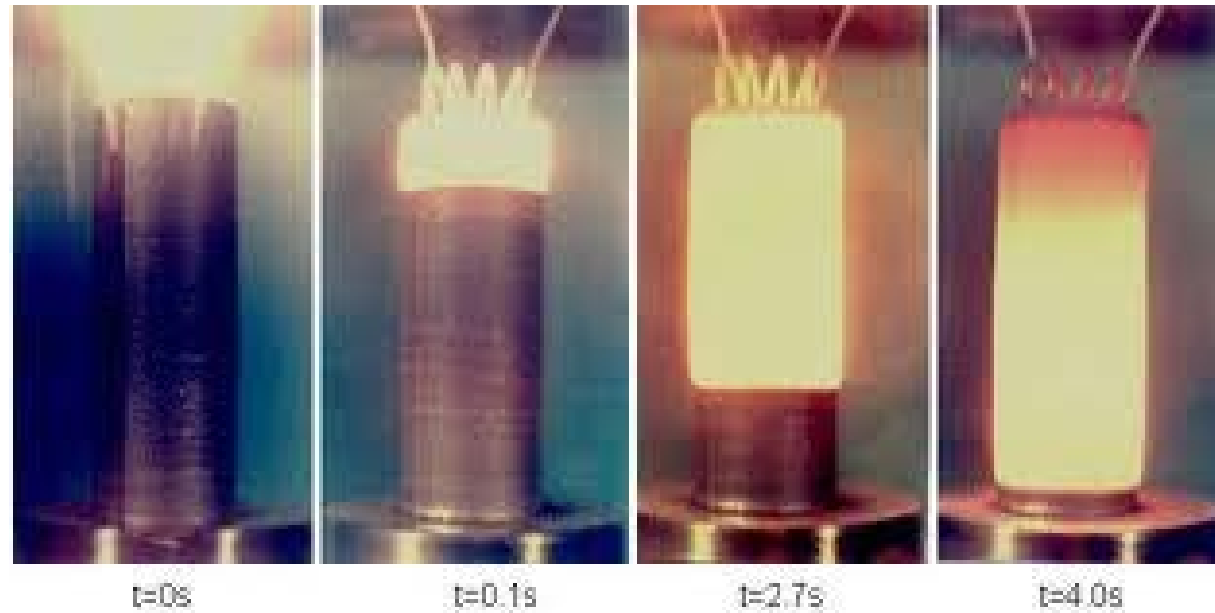
**Characteristics of the combustion synthesis of
TiC and Fe-TiC composites**

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Some key questions from my experience

- What is in it for me (my company, my RI)? (Cost, time, benefit analysis)
- Why should I share?
- What do I share and what do I keep?
- Is there a business here for me? What are the arrangements for who benefits if successful
- I will change one thing but not two out of three (market, technology, production).
- What is the risk to my company, my RI? Do we share the risks or is it all one way?
- How long to market?
- What is the regulatory framework?
- Can I have exclusivity?
- Will my board back the idea?
- How will you convince early stage investors?
- What is the business model?
- Does it contravene State Aid Rules



Juncker's Agenda Ten Policy Areas

1. **A new boost for jobs, growth and investment**
2. A connected digital single market
3. A resilient energy union with a forward-looking climate change policy
4. A deeper & fairer internal market with a strengthened industrial base
5. A deeper and fairer economic and monetary Union
6. A reasonable and balanced free trade agreement with the U.S.
7. An area of justice and fundamental rights based on mutual trust
8. Towards a new policy on migration
9. A stronger global actor
10. A Union of democratic change

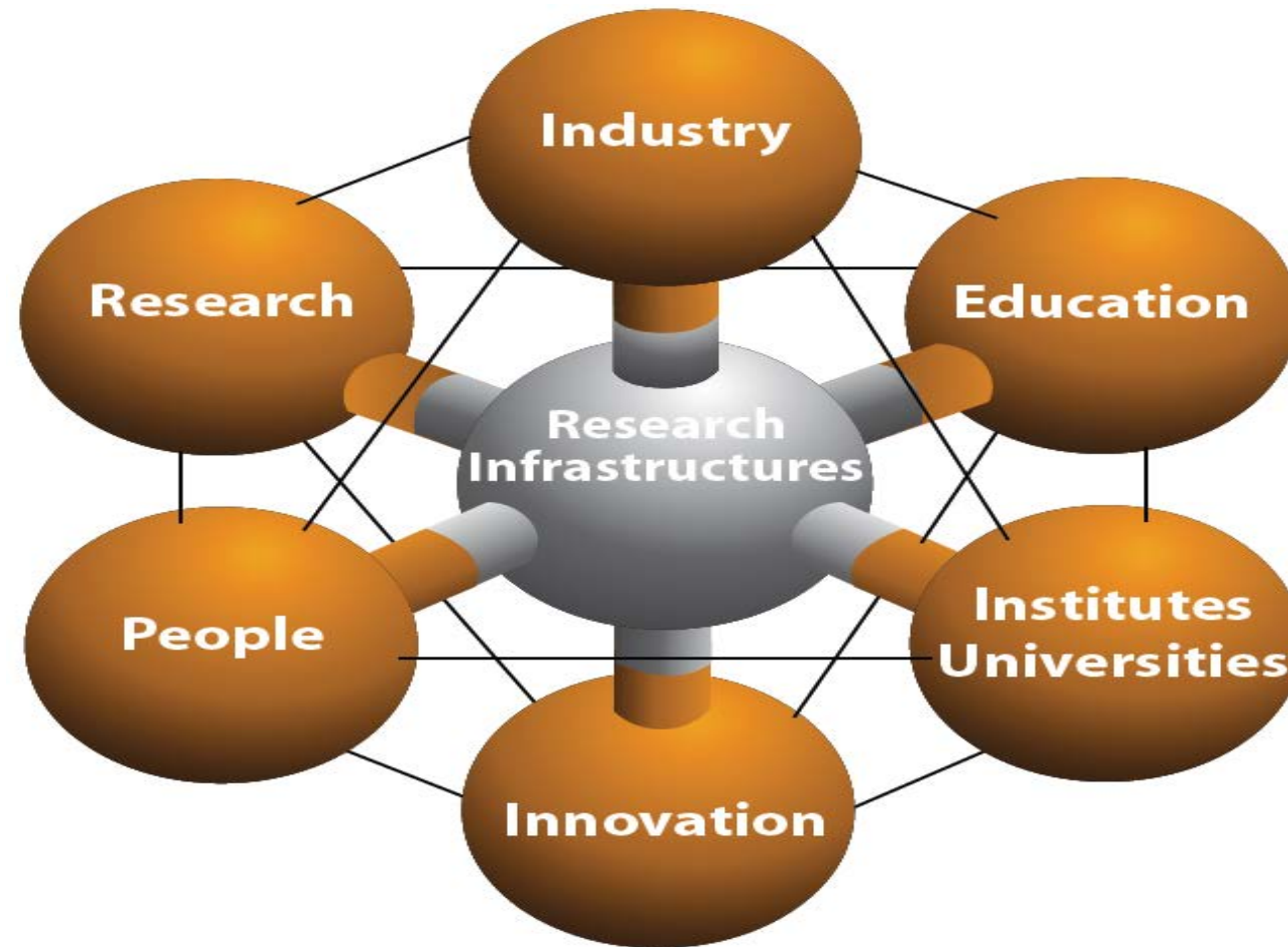
New Commissioner's priorities outlined in his Parliamentary Session

- Moedas Priority 1: "Advance with the creation of the framework conditions that enable the full potential of European research, science and innovation"
- Moedas Priority 2: "Delivering on Horizon 2020"
- Moedas Priority 3: "Defend the value of excellence in science and research"

A seed change in thinking is needed

- Member states are concerned about employment especially of young people in their own country
- SMEs are all very well but jobs for large numbers are needed
- Critical mass is required to create companies/technologies that will grow to a significant size
- There needs to be a true partnership between public/private funders, idea generators and business – Universities have their part but **so do European RIs working together**
- “Open Innovation” means sharing for a common purpose and a common share of outcomes

The Centrality of Research Infrastructures for Innovation



The challenge for European RIs in the coming decades

- Creating societal value for Europe rooted in leading research facilities is of paramount importance for competitiveness in high technology, via research induced innovation and spin-offs.
- The EC in H2020 encourages research infrastructures to act as early generators/adopters of new technology, and to promote R&D&I partnerships with industry that **ultimately translate into job opportunities**.
- In a world scenario of increasing economic and industrial competition for the coming decades Europe cannot afford to miss the know-how and technological breakthrough potential of RIs acting as innovation engines together with industry.
- A new EU wide business model is needed to make an impact

Current collaboration models are not adequate to tackle the challenges...

Example:

1. Existing collaborative models between RIs and industry are mainly based on a fairly passive supply-demand relationship.
2. Industry supply RIs with commercially available technologies that inadequately meet the true RI instrumentation needs.
3. Supplied technologies need further to be modified or developed “in house” by RIs.
4. This important enhancement rarely results in a feedback loop back to industry. A crucial example is manifested in the area of particle sensor and imaging technologies.
5. The overall end result is a seriously under-exploited collaborative ecosystem in which the full technological and societal innovation potential for Europe is missed.

What needs to be done?

- Innovative R&D&I **partnerships between RIs and industry** to co-facilitate the transition from **Open Science to Open Innovation**.
- **Identify** key market drivers (seldom are the initial markets those that develop).
- RIs and Industry **co-innovate together** from the early stage of the innovation process as equal partners by finding areas of mutual and societal interest.
- Break with the existing passive deliverers/receptors of technology model and but co-create and co-develop competitive opportunities for Europe.

The Rainbow Seed Fund is an evergreen venture capital fund for some of the leading UK publicly funded research organisations. It is independently managed by Midven and provides capital to commercialise the partners' research.

- The partnership consists of:
- Science and Technology Facilities Council (STFC)
- Biotechnology and Biological Sciences Research Council (BBSRC)
- Defence Science and Technology Laboratory (Dstl)
- Natural Environment Research Council (NERC)
- Scottish Crop Research Institute (SCRI)
- Health Protection Agency (HPA)
- National Physical Laboratory (NPL)
- Macaulay Land use Research Institute
- Veterinary laboratories Agency (VLA)
- Culham Centre for Fusion Energy (CCFE)

The board is chaired by an independent chair and there are 2 independent directors for every one director representing the partnership. The fund is managed by an independent fund manager who brings proposals for investment to the board

- The Rainbow Seed Fund is a £24m, early-stage venture capital fund dedicated to kick-starting promising technology companies developed at some of the UK's largest publicly-funded research facilities, in the rapidly expanding science and technology campuses linked to them and in the field of synthetic biology.
- Created in 2002, the Rainbow Seed Fund is backed by ten UK publicly-funded research organisations and the [Department of Business, Innovation and Skills \(BIS\)](#). The Fund holds investments in some of the UK's most innovative companies in areas as diverse as novel antibiotics, research into Alzheimer's disease, "green" chemicals and airport security.
- Supported 30+ technology start-up companies in sectors such as health, environmental services, international development, and security and defense.
- Leveraged more than £150 million of private investment from just £7 million of its own investment (a ratio of over £20 for every £1 from Rainbow).
- Bolstered the UK's exports and employment -- 75%-100% of Rainbow Seed Fund company sales are overseas and our companies have created 170+ high-value, technology jobs.

Cobalt Light Systems wins MacRobert Award

UK's premier engineering prize MacRobert Award presented to Cobalt Light Systems

One of the successful technologies developed and funded by the Rainbow Seed Fund

Known for spotting the 'next big thing' in the technology sector, the Royal Academy of Engineering MacRobert Award identifies outstanding innovation with proven commercial promise and tangible societal benefit. As well as benefiting from the prestige of the award, the winners receive a gold medal and a £50,000 cash prize.

The judging panel, representing the cream of modern British engineers and entrepreneurs from a range of disciplines, selected Cobalt for its potential to touch the lives of millions of people. The company was formed in 2008 as a spin-out from the Science and Technology Facilities Council. It was chosen as an excellent example of successful technology transfer from lab to market and is in use in over 60 airports world wide





Oxsensis is pioneering in a new breed of optical instrumentation for precision control in super-harsh environments such as power generation, aero engines and airframes, oil and gas production and exploration, industrial processing and heavy transport



Today we partner with major companies from a number of industries to develop applications of our unique optical sensor technology to realise opportunities within their programmes. This creates a 'virtuous circle' with programme specific foreground IP jointly exploited with our partners, as well as enhancing the core optical background IP base, which we then apply in complementary programmes.

4 Private Venture Capital Partners plus Rainbow and RAL

Next moves



- Judge the level of interest from individual RIs, EIROForum and ERF as a whole
- Convince Political actors that it is a good idea. These include MS and EU, (ITRE Industry, Research and EnergyCommittee)
- Develop a sustainable business model between the partners
- Work with the EC and EIB on early stage funding (Anne Glover (president of European Venture Capital Association is already in discussion to create a European Venture fund like the Rainbow fund).
- Create organisation between partners with agreed governance structure
 - Possibly a core with foundational members plus other members on an interest basis
 - Independent chair and directors
 - Investor involvement both public and private