

# How early career professionals can help transform the industry for a better future

Dr Chris Pilgrim  
Innovate UK KTN

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[www.ktn-uk.org](http://www.ktn-uk.org)



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1. Opportunity for early career professionals and students
2. Why collaboration is important
3. How we are supporting early career professionals and students

What do you emphasise when advertising a job / postdoc / PhD?

What are the main sections in the job specification / description?

- *Skills required*
- *Main responsibilities*
- *Management responsibilities*
- *Background knowledge*
- *Impact on society*

What do you most value in a job / career?

What would most excite you to work on a particular project?

- *Autonomy*
- *Cutting edge technology*
- *Money*
- *Notoriety*
- *Impact on society*

# EIL Future Leaders Dialogue survey results 2022

Students want a job which has an impact on society and, currently, on particularly the climate crisis.

58% of students want to know if a position has an impact on society

Only 32% of employees present this aspect of their company to potential recruits



Image courtesy of Alexis Torrele, Worley

# Foundation Industries – Impact on society



**~ £52 billion**

Worth to UK economy



**~75% materials**

Encounter on a daily basis



**~10% CO2 emissions**

For UK homes and businesses

# Interventions required

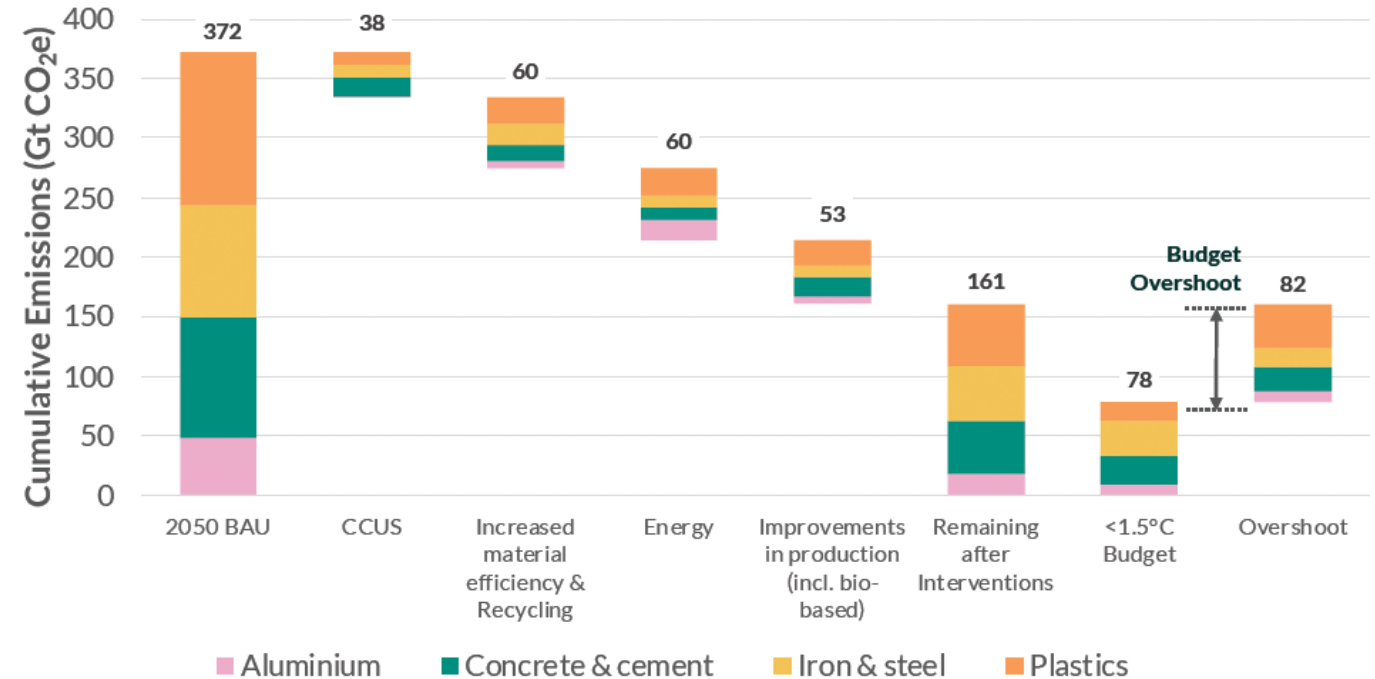
Eunomia report – Nov. 2022

“Published plans for net zero by 2050 in the materials sector are **unlikely to be enough to limit warming to 1.5°C**. Likely trajectories show that the result could be as high as 2°C.”

“The impact of deploying abatement technologies after 2030 is substantially less effective than more near-term, widespread, commercial deployment.”

**Large scale technical challenges ahead will require significant research & innovation**

*Is Net Zero Enough for the Material Production Sector?, Nov. 2022,*  
<https://www.eunomia.co.uk/reports-tools/is-net-zero-enough-for-the-materials-production-sector/>





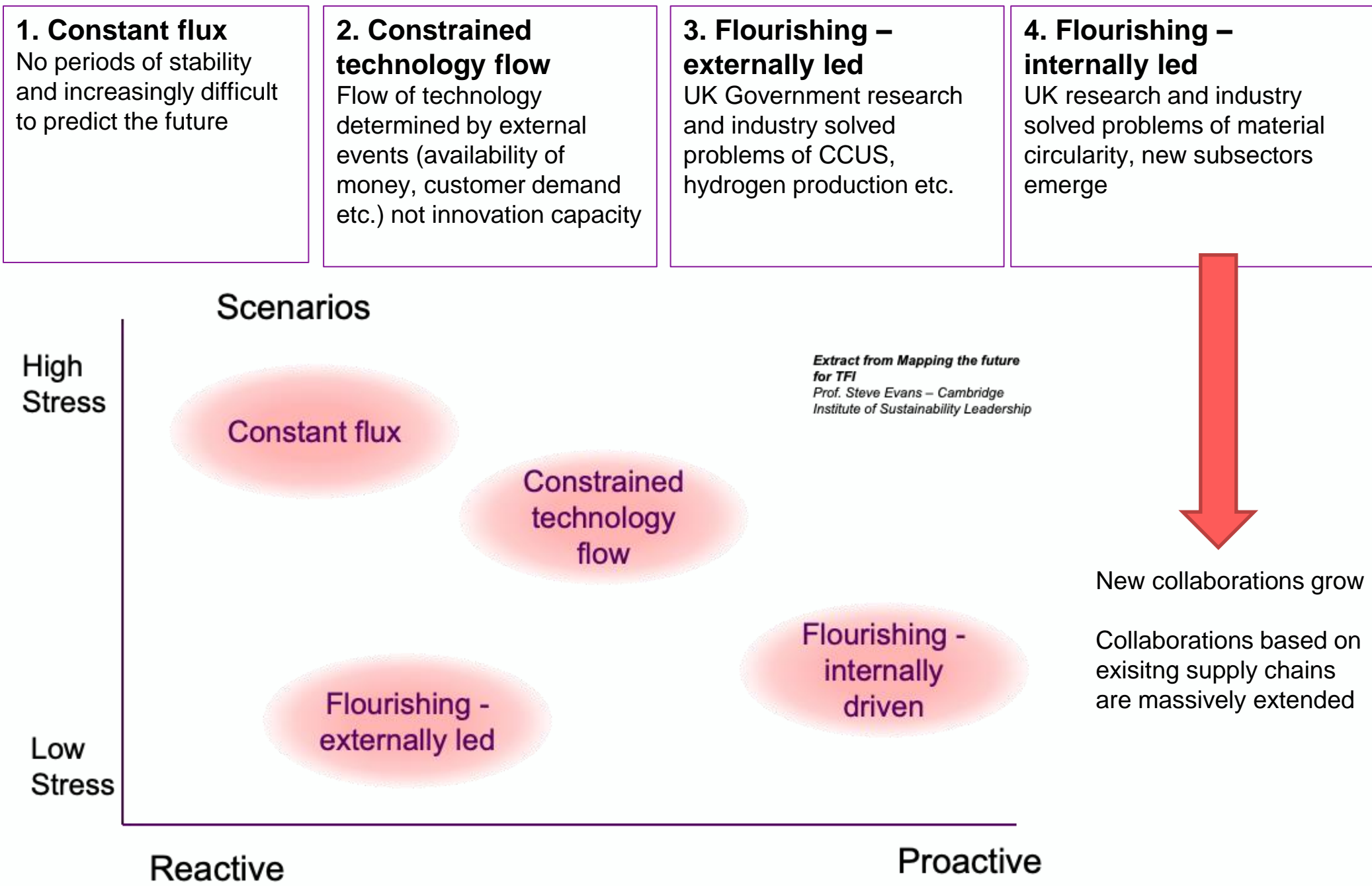
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# Scenarios



# Collaboration is key

Customers / end-users will require it to meet their sustainability targets

Technical challenges require multi-disciplinary solutions

- Automation & Digitisation
- Artificial intelligence
- Electrification

**New skills**

Biggest challenges are not technical – new ways of working

- Cross-sector
- Financial organisations

**Innovative approaches**

**Exciting opportunity for early career professionals**

## Packaging

### 2050 Packaging Material Demand

“Ongoing collaboration between the packaging sector and the Foundation Industries will be crucial in the transition to Net Zero.”

Oakdene Hollins Report 2022

## Construction

### Materials requirements of the 2050 construction sector

More partnering / collaboration in the supply chain

BRE report 2022

The infographic details the Flue2Chem project, a two-year programme aimed at decarbonising the UK sector. It features a central gear icon labeled 'METHOD' with the text: 'Development of a new business model and capability to utilise industrial waste gases to produce affordable feedstocks and chemicals for use in the production of consumer products in the UK.' To the left, the 'PURPOSE' is stated: 'The Flue2Chem project will convert industrial waste gases to create more sustainable consumer products.' To the right, the 'GOAL' is 'Cut around 15-20 MILLION TONNES of carbon dioxide emissions a year and help the UK reach its net zero target.' Funding is noted as '£2.68 million from Innovate UK'. The project is supported by a network of partners, including Unilever, JM, SCI, P&G, cpi, BASF, UPM BIOFORE BEYOND FOSSES, TATA STEEL, CRODA, carbon clean, University of Sheffield, reckitt, UNIVERSITY OF SURREY, cpi, and HOLMEN. A concluding statement reads: 'Industry giants from £73 billion UK sector embark on first ever cross sector collaboration to tackle decarbonisation.'



## About Us

Innovate UK KTN exists to connect innovators with new partners and new opportunities beyond their existing thinking – accelerating ambitious ideas into real-world solutions.





# Our Network



**46,229**  
Unique  
Organisations



**72%**  
Small

**15%**  
Medium

**13%**  
Large



**234,478**  
innovators

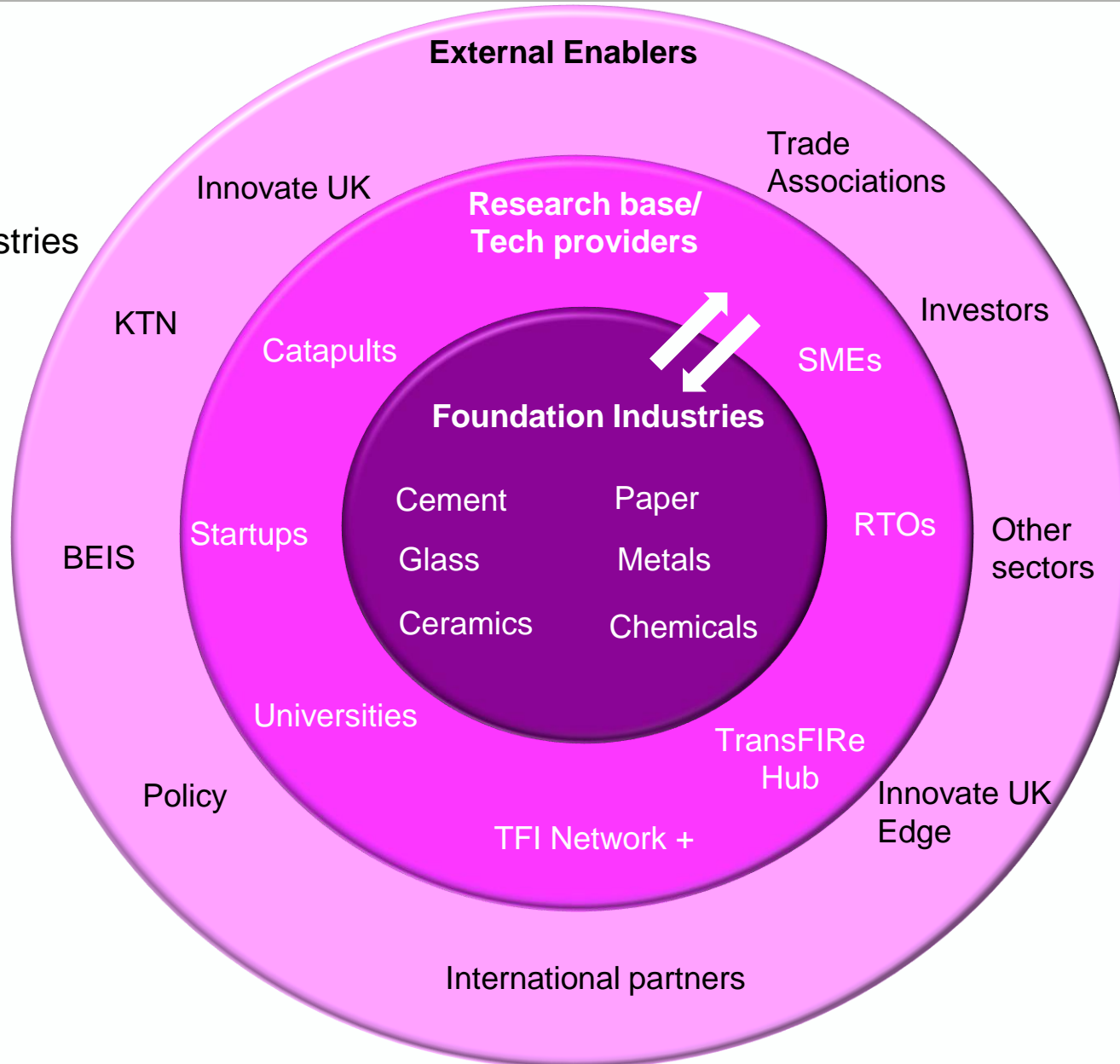


Every university  
in the UK

# Foundation Industries & KTN

## 1. Community Building

Built a network of 1000+ individuals representing different Foundation Industries sectors and value chain



## 2. Funding Innovation

Connect investors and innovative companies to address TFI challenges

## 3. Collaborations and Partnerships

Brokered consortia building. Linked sector challenges and solution providers

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# How we are connecting early career professionals in Foundation Industries

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## Women Innovators in Foundation Industries (WINFI)

Workshop series throughout 2023 open to all genders

- Raising the profile of women innovators as thought leaders in Foundation Industries
- Supporting businesses to define and implement gender diversity strategy
- Enabling the “inner innovator” of professional women in Foundation Industries
- Creating networking opportunities for women, allies and other stakeholders to foster innovation collaborations and partnerships

Next event: #IAmRemarkable

Where: Online

When: 16<sup>th</sup> March 2023

Goal: Improve self-promotion motivation and skills

## COMING SOON

Podcast mini-series - Working with leading podcast in Material Science to cover innovation in the Foundation Industries





# How we are connecting early career professionals in Foundation Industries

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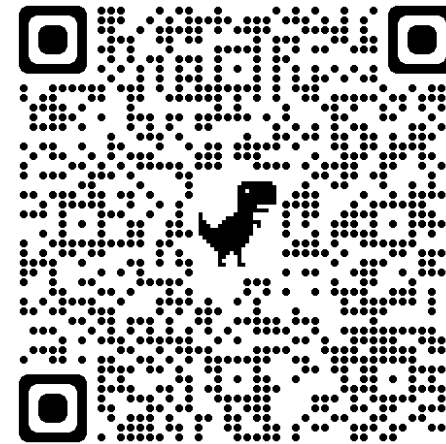
## Future Leaders Group

- Change the status quo
- Transform perceptions of the foundation industries
- Drive the equality diversity and inclusion agenda
- Increase the pipeline of future talent into the industries
- Bring the industries closer together into a strong cohesive sector with a strong influential voice

Get in touch if you are interested to join



Website and webinar series

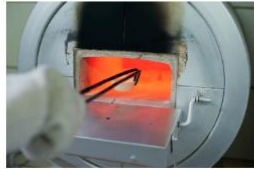


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# How we are supporting early career researchers in Foundation Industries

- Two academic and industry research hubs
- TFI Network+ - specific early career researcher funding competition in 2022

## Early Career Researcher Funding Call



[Low-temperature densification of Al<sub>2</sub>O<sub>3</sub> through a modified cold-sintering process](#)

Edoardo Mantheakis  
University of Sheffield



[Developing biocomposite materials as low-carbon alternatives to ceramic tiles](#)

Alessia Andrews  
University of Manchester



[Element-based mapping of waste and by-product material flows for industrial symbiosis](#)

Alastair Marsh  
University of Leeds



[Improving surface interactions of waste plastics as grain substitutes within concrete](#)

James Railton  
Northumbria University



[Ensuring a sustainable future for recycling in the paper value chain \(SRPV\)](#)

Hassan Ahmad  
Brunel University London



[New Metrology for Hydrogen Flame Imaging](#)

Yufeng Lai  
University of Sheffield



[Sustainable asphalt pavements with recycled concrete aggregate and waste glass](#)

Haopeng Wang  
University of Nottingham



[Circularising the Pressure Moulding of Ceramics](#)

Ahu Gumrah Dumanli-Parry  
University of Manchester

**TFI NETWORK+**  
TRANSFORMING THE FOUNDATION INDUSTRIES





**Knowledge Transfer Partnerships** build long-lasting connections and collaborations between the working and learning worlds. Graduates, businesses and academic institutions come together to solve challenges through innovation.



# Resources



## Innovate UK KTN Website

<https://ktn-uk.org/>

[Foundation Industries](#)

[Materials](#)



## Innovate UK KTN Newsletters

Relevant examples:

Foundation Industries  
Materials  
Clean Energy & Infrastructure  
Complex Systems  
Circular Economy

Subscribe at the  
bottom of the  
webpages



## Funding opportunities

<https://ktn-uk.org/opportunities/>

Filter by sector,  
eligible organisations,  
funding types etc.



## Contact

Chris Pilgrim  
[christopher.pilgrim@iuk.ktn-uk.org](mailto:christopher.pilgrim@iuk.ktn-uk.org)



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