



UK Research  
and Innovation



## Transforming Foundation Industries Network+

### Early Career Researcher Small Project Application General Guidance



## **TFI Network+ Open call for Early Career Researcher<sup>1</sup>-led small projects with potential to generate transformational impact on the Foundation Industries**

### **What is the TFI Network+**

The foundation industries (namely glass, ceramics, metals, paper, cement and bulk chemicals) are worth £52B per annum to the UK's economy, but account for 10% of the UK's total CO<sub>2</sub> emissions. In recognition of the global and national importance of these industries, the Transforming Foundation Industries Challenge, delivered by UKRI, has awarded £2M to form the TFI Network+ to assist the foundation industries to remain competitive whilst simultaneously facing challenges from environmental legislation and the drive towards net-zero carbon 2050.

### **Aims of the TFI Network+ and its remit**

The core aim of TFI Network+ is to co-create and identify with the Foundation Industries new innovative technologies that can enable transformation toward sustainable practices while optimising performance by coordinating and channelling a wide range of expertise throughout UK academia in themes such as:

- i) Energy efficiency:** Energy costs in foundation industries are high, and each industry faces its own challenges to improve energy efficiency and reduce greenhouse gas emissions. Through knowledge transfer and cross-fertilisation of ideas, the TFI Network+ will seek opportunities to co-create new concepts and to transfer best practice from one sector to another.
- ii) Next generation processes:** The fundamental properties of materials, such as their melting point, are often seen as limiting factors in reducing energy and resource usage. Some foundation industries, such as glass and ceramics, are investigating new processes that can significantly reduce the intrinsic energy of production whilst others, e.g. cements, are investigating low carbon footprint material alternatives. The TFI Network+ can help establish the feasibility of these new processes in the drive towards greater sustainability.
- iii) Manufacturing informatics:** The foundation industries have made considerable progress in transitioning business models from historical inwardly focused supplier/customer relationships, to ones that embrace the wider end-to-end supply chain. However, there is still potential for enabling technologies (grouped under the umbrella term of 'Industry 4.0' or 'digital') to help facilitate a step-change in supply chain function in Foundation Industries. The TFI Network+ will investigate the use of AI and digital tools for through process modelling, including real time data capture and management.
- iv) Circular economy:** The ability to re-use, recycle or repurpose products and raw materials presents significant challenges and opportunities to the foundation industries, as without careful process analysis this activity can actually increase energy and material costs, or result in inferior products. It is thus necessary to evaluate the properties of recycled and substitute feedstocks through improved

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<sup>1</sup> For the purposes of this call, an ECR is a Postdoctoral Researcher with a contract at a UK university

analytical methods, develop processes that are more forgiving of feedstock quality, investigate re-use of feedstocks, and ensure that feedstock supplies are geopolitically secure.

v) Enabling transformation: The process of innovation and its implementation is quite different across foundation industries. The TFI Network+ aims to aid evolving policies, regulations and legislation, to support transformation throughout the whole value chain and systems, to remove barriers and create markets for the adoption of more sustainable materials and technologies.

This third call for proposals from Early Career Researchers (ECRs) is an **open call** and will consider all high quality proposals that come under the five themes listed above.

### **Scope of the Call**

The TFI Network+ is looking to fund high quality projects that, with industrial participation, have potential to drive transformative impact in the foundation industries, and will also enhance the career of the applicant. We would particularly welcome participation from companies who don't have much experience of working with the Foundation Industries, but see potential to develop relationships with this sector. This could include for example, SMEs with little experience of applying for research or development funding, or working with Foundation Industries, but have skills and technology that may have a transformative impact on the Foundation Industries.

Projects may be in any discipline, or interdisciplinary.

The impact of such projects will be to:

- Reduce waste, resource use, water use or energy consumption
- Support the development of circular supply chains
- Improve the recyclability or reuse of materials
- Create new sustainable materials or chemical processes and/or products
- Improve productivity or profitability of companies
- Provide evidence for future policy interventions
- Support the applicant's career aspirations

The above list is not exclusive, and we would welcome ideas from the engineering and physical sciences, social sciences and the arts & humanities.

We will **not** fund projects that:

- do not focus on foundation industries
- do not have at least in-kind industry support
- are not led by a UKRI- eligible academic
- focus on fuel switching (e.g. combustion of hydrogen, waste or biomass) or development of greenhouse gas capture technology (the 'utilisation' element of carbon capture & utilisation is within scope)
- are related to the pharmaceutical or petrochemical industries
- focus solely on skills
- are capital projects
- fall outside of the Technology Readiness Levels typically funded by UKRI<sup>2</sup> (we are looking for low TRL projects)

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<sup>2</sup> [https://epsrc.ukri.org/epsrc/cache/file/7DC41E72-C05F-40C5-84D2B69524AF3286\\_featuretwocolumnwide.png](https://epsrc.ukri.org/epsrc/cache/file/7DC41E72-C05F-40C5-84D2B69524AF3286_featuretwocolumnwide.png)

## **Eligibility**

1. We will only accept one application per Principal Investigator
2. Applications will only be accepted from ECRs working in UK HEIs. For the purposes of this call, an ECR is a Postdoctoral Researcher with a contract at a UK university. **A letter of support from your supervisor or head of department is required**, stating you have their permission to apply for this funding.
3. We will not accept applications from Postdoctoral Researchers who, at the time of receipt of funding, will already be benefiting from a TFI Network+ small project grant
4. We will not accept proposals that are a continuation, or build on results, of projects previously funded by the TFI Network+
5. We will not accept proposals that are in conjunction with a project that the applicant is currently contractually obligated to

## **General Guidance**

**1. Application form submission:** Applications are being accepted from **9<sup>th</sup> May 2022 to 15<sup>th</sup> July 2022** via the TFI Network+ website. Please register for an account on [www.tfinetworkplus.org](http://www.tfinetworkplus.org) in order to upload the completed application form.

**2. Document format:** You need to register as a member on the TFI Network+ website in order to upload Part A (applicant details) and Part B (case for support) into your membership area. Please use the format of **'Surname, Name PART A'** and **'Surname, Name PART B'** as the file name. Maximum 3MB per file.

**3. Eligibility:** If you come across any issues in seeking permission from supervisors, for example related to your current terms of employment, please speak to us so we can clarify with UKRI or your current funding body

**4. Secondments:** The aim of this call is to strengthen ties between ECRs and industry, and to assist in two-way knowledge transfer. Industry participation, in the way of secondments, is therefore highly recommended but not mandatory, and their support can extend the 3-month TFIN+ funded period to 6 months (or longer if appropriate).

Monies from the TFIN+ project fund however, cannot be directly used to fund secondment costs. Companies should instead indicate their willingness to host an ECR within the letter of support, and apportion the appropriate level of in-kind support, for example by funding salary costs.

**5. TFI Relevance:** Projects must be relevant to the foundation industries. Ideal projects should demonstrate applicability across two or more foundation industries, but exceptions may be made for excellent projects with expected impact on only one industry.

**6. Technology Readiness Level:** We will accept projects that are laboratory based or desk based. As funding is from UKRI we expect projects to be the level that is typically funded by UKRI.

## **7. Resources requested**

- Projects should be costed as for a standard UKRI [proposal](#).
- Projects should run for up to 3 months on a full time basis, or for longer on a part time basis. e.g. 6 months at 50% FTE. Additional funding from industry should be used to extend the duration of the project via secondments, e.g. to cover salary costs

- Whilst there is no upper limit, we would not expect proposals to cost more than ~£8k/month (at 80% FEC) on a full time basis. The management committee reserve the right to request reductions if a budget is deemed excessive
- The costing table should include costs at 100% and the request from the Network+ at 80% FEC. Resources can be requested for researcher and technician time, travel, subsistence, consumables and facilities. The Network+ will not fund new equipment above the £10k UKRI threshold (inc. VAT), nor student stipends.
- **Sub-contracting** is allowed but Research Organisations must ensure that expenditure on sub-contracts are subject to [robust controls](#)<sup>3</sup> to ensure value for money and propriety. All costs should be fully documented/invoiced and available to UKRI if required.

Should you have any queries when costing a project, please speak to the finance team in your university in the first instance, and we are happy to offer guidance if contacted on [tfinetworkplus@sheffield.ac.uk](mailto:tfinetworkplus@sheffield.ac.uk)

**7. Project duration:** projects may run for up to 6 months on a part time basis (see **Section 4** above). All approved grants are expected to start in **October or November 2022** but we have some flexibility regarding start dates- please get in touch if you need to. The TFI Network+ Management Committee are willing to offer mentorship to PDRAs in order to ensure that grants progress satisfactorily. Project end dates depend on the FTE of the ECR and the impact of additional industry cash support and secondments. All funding is subject to UKRI standard T&Cs and the additional conditions for the TFIN+ (available upon award of the funding).

#### **8. Guidance on Part B case for support:**

**A.** Please limit the industry partner description (Sections I & II) to 1 page

**B.** Please limit the Project Description (Sections III-VII) to 2 pages, font size 11. There is no word limit for each section. References may be added to a third page, Section VIII

**C.** Individual sections:

##### **I) List the industry sectors involved**

**II)** Please describe how the secondment will work in practice; its duration; and any plans that will actively assist in transferring knowledge to and from the company. Please also describe the level of financial or in-kind support provided by the industry partner. Plans for the secondment and the level of support must be reiterated in the company letter of support

**III) SUMMARY & SECTORAL IMPACT ON FOUNDATION INDUSTRIES:** If the application is successful, this section will be published on the Network+ website. Please provide a general summary of no more than 200 words and the potential impact of a successful project.

**IV) AIMS AND OBJECTIVES (WITH INDICATIVE TIMESCALES):** Explain the overall aim of the project, and list some key objectives. Accompany objectives with probable timelines, e.g. Objective 1: Month X

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<sup>3</sup> <https://epsrc.ukri.org/funding/applicationprocess/fundingguide/resources>



**V) SCIENTIFIC & TECHNICAL DESCRIPTION:** the case for support will be reviewed by a broad range of reviewers with differing expertise. Please ensure your project can be understood by well-informed non-subject matter experts. You may include images or diagrams.

**VI) CAREER DEVELOPMENT:** An important part of the ECR call is the degree to which it will help support the applicants to develop their own sustainable independent research career. Please provide clear statements of how this award will contribute to this ambition.

**VII) JUSTIFICATION OF FUNDS REQUESTED:** Justify the need for direct costs. Any requests for small items of equipment (<£10k) must be closely aligned to the aims and objectives of the project.

**VIII) REFERENCES:** May be included on a third page

**IV) INDUSTRY LETTERS OF SUPPORT:** These are mandatory and must be attached to the end of Part B. The simplest option is to use the snipping tool to create a JPEG of the letter and insert the image.

**X) Supervisor or head of department letter of support:** this is mandatory

### Timeline

- Call opens **9th May 2022**
- Deadline for applications: **16:00, 15th July 2022**
- Funding decision: **15th Sept 2022**
- Project start date: **Oct/Nov 2022**
- End date: variable, but expected to be 3 to 6 months from start date

**Assessment Criteria** Projects will be scored on the basis of:

1. Scientific excellence. This is the primary criteria and projects must demonstrate scientific excellence, novelty and potential impact
2. Impact on industry sector(s) and career. This call is to help ECRs achieve some of their career aspirations whilst enabling transformation in the foundation industries
3. Industrial participation. This call is specifically to allow ECRs to strengthen industry links, and to expose companies to new science and technology. A well planned secondment to industry will be attain a higher score

### Selection Process

1. Blind peer review by Scientific Advisory Panel and the wider academic community
2. Ranking based on score
3. In the event of two or more projects being equally ranked, special consideration will be given to under-represented groups. Please contact Neil Lowrie if you qualify for EDI<sup>4</sup> consideration. This information will be treated as confidential and, in line with GDPR requirements, your information will not be shared outside of the review process.

**Contact:** If you have any questions about the TFI Network+ call for mini-projects, please contact [tfinetworkplus@sheffield.ac.uk](mailto:tfinetworkplus@sheffield.ac.uk)

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<sup>4</sup> <https://www.ukri.org/our-work/supporting-healthy-research-and-innovation-culture/equality-diversity-and-inclusion/addressing-under-representation-and-active-participation>