



Chair in Emerging Technologies

Applicant Guidance Notes 2023/2024

Deadline: 11 April 2023

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Introduction

The Academy's Chair in Emerging Technologies (CiET) scheme aims to identify global research visionaries and provide them with long-term support to lead on developing emerging technology areas with high potential to deliver economic and social benefit to the UK.

Funded by the UK Department for Business, Energy, and Industrial Strategy (BEIS), the call will be open for 17 weeks, from 13 December 2022 to 11 April 2023. The total award request is £2.5 million over 10 years with annual payment of £250,000 per annum. The Academy reserves the right to amend the total funding amount considering government advice.

Please note Chairs in Emerging Technologies calls will be managed on an annual basis. As of publication (13 December 2022), future Chair in Emerging Technologies calls are yet to be confirmed.



In addition to covering employment and research costs for the Chair over a period of up to ten years, the award enables a sustained and strategic focus on advancing the technology to application.

Such awards require a powerful case to be made for the value of an extended long-term vision through to application of the technology. This in turn should show the value for funding that provides sustained support for a world-leading researcher, ensuring continuity of their focus across other grants and contracts and removing any expectation of duties that do not support the technology programme.

It is often the nature of an emerging technology that its potential is not widely appreciated until championed by a visionary individual who can set out clearly the opportunities it offers. Thus, this call is deliberately broad and open, and we encourage applications that make a case for disruptive innovation in well-established areas or overlooked fields as well as new emerging technologies.

Applications are welcome from across a broad range of engineering and technology areas, including research topics currently considered basic science, but which now require engineering ways of thinking to drive them towards application, and also research topics in more established technology areas where the applicant has identified a high-impact novel approach.

The cohorts of previously supported chairs indicate the broad range of fields supported, including technologies for off-grid water devices, trustworthy robotics, ocean engineering, and the development of memristors for neuromorphic computing. We welcome proposals in previously unsupported fields with a similar philosophy of addressing well-defined engineering challenges that will enable new technological approaches to move towards practical deployment.

There is no restriction at this stage on potential applications for the future technology, although relevant legal and regulatory frameworks should be respected. However, your application should:

- Focus on a well-defined technology addressing a clearly articulated engineering challenge.
- Focus on design, build and production towards commercialisation.
- Be about an emerging and not already commercialised technology.
- Be novel, or find new applications to an established technology.
- Accelerate or enable the development of other emerging technologies.
- Provide internationally leadership or influence.

The emerging technology should not just be a suite of existing techniques.

Please refer to the CiET webpage to explore the current [Awardees](#).

Evidence of proof of concept should already be established and a clear pathway to future impact described. Beyond this, we are not prescriptive about the Technology Readiness Level or similar assessment of innovation readiness expected of applications. However, we do require a clear ten-year research vision underpinning the proposal that will make a significant difference to how the emerging technology is taken forward and the consequent economic and social benefit to the UK.

In a change to previous guidance the Academy is allowing resubmissions. Previously unsuccessful applicants are permitted to resubmit any proposal that has previously been submitted to the Chair in Emerging Technology (CiET) scheme. Resubmitted proposals must clearly articulate where modifications and improvements have been made considering the panel and reviewers' feedback. It will not be sufficient to only address these points. Improvements should be considered across the whole application, including but not limited to:

- Aims and objectives such as a new concept, idea or change of focus.
- The scientific approach to meet these objectives.
- New or evolving techniques or methodologies.
- The team of investigators and researchers.
- Resources required, for example new facilities or opportunities.
- Support from the host institute, such as an increased commitment or new opportunities.
- New opportunities for collaboration or commercialisation.

Resubmissions are not guaranteed funding and will be in competition along with all other proposals in that application cohort.

The Academy welcomes applications from high-calibre researchers currently based outside the UK, in line with the [UK Innovation Strategy](#) to make the UK a global hub of innovation and to attract talent to the UK.

The Academy is committed to diversity and encourages applications from women and other groups who are currently underrepresented across the engineering profession.

The appointed Chairs will:

- Lead major research, translation, and innovation programmes for key emerging technologies.
- Build world-leading centres of excellence in strategically important technologies, supporting their commercialisation and adoption.
- Build and maintain a strong network of industrial and other partners to facilitate technology commercialisation and the creation of significant UK economic and social benefit.

These will in turn allow the UK to gain comparative advantage across a range of disruptive or platform technologies and enable the opportunity for the nation to capture greater value from these advances.



As well as funding for their post, the appointed Chairs will be provided with:

- Mentors, who are Academy Fellows with relevant expertise to the research programme, to provide independent advice and guidance throughout the duration of the award.
- Networking and training opportunities with and through the Academy's Fellowship and events programme.
- Support for [Global Talent visa](#) for applicants based outside the UK.

Diversity and inclusion

The Royal Academy of Engineering is committed to diversity and inclusion and welcomes applications from all underrepresented groups across engineering.

It is the Academy's policy to ensure that no applicant is disadvantaged or receives less favourable treatment because of age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, or sexual orientation.

Access Mentoring

The Academy aims to provide additional support to applicants from groups that are persistently underrepresented within UK engineering through the grant application process. This positive action will contribute to improving diversity in the talent pipeline and widening the diversity of applicants and awardees within the Academy's research grant schemes.

To be eligible for Access Mentoring support for Chair in Emerging Technologies applications, applicants must be from one of the following groups:

- Women
- Black people (including any mixed ethnicity groups that include Black ethnic backgrounds)
- Disabled people

Access Mentoring is a resource-limited opportunity. Applicants do not need to wait until the deadline to submit and early submission is encouraged. Mentors will be assigned on a first come first served basis. For more information on Access Mentoring please see [guidance](#) and how to apply.

Eligibility criteria

- Resubmissions are permitted. Please clearly articulate modifications and improvements that have been made, considering the review panel feedback.
- All projects must commence on **4 March 2024**, and end on **3 March 2034**.
- Applications with alternative dates will not be eligible.
- Chairs in Emerging Technologies are professorial appointments. Applicants who haven't been awarded a professorial title but have demonstrated



research achievements such that they would be strongly considered for professorial promotion at present, are eligible to apply. In supporting the submission, the university is understood to be affirming this. It is the Academy's expectation that successful non-professorial awardees gain a professorial title upon becoming a Royal Academy of Engineering Chair in Emerging Technology.

- Awards can only be held at a university, or jointly between the university and an organisation (e.g., national laboratory, research institute, or innovation organisation), based in the UK. The Academy's contract will exclusively be with the university.
- A letter of appointment from the university (which may be conditional on receipt of the award) must be provided if the applicant is currently based outside the UK university system. All applications must include a letter of support from a dean, pro-vice chancellor for research, or someone in an equivalent position, clearly outlining the university's commitment to supporting the emerging technology field, and the applicant as a global leader of the field. The expected contents of this letter are detailed on page 17 this document under title 'Letters of support and declaration'. All applications may include up to 3 letters of support from key or most relevant collaborators.
- Applications are welcome from across a broad remit of engineering and technology, including areas currently considered basic science, but now requiring engineering ways of thinking to drive them towards application, and in areas where technologies are well-established but could be significantly improved by novel approaches. Applications must be centred on enabling and driving technological innovation. Therefore, proposals whose vision is primarily around scientific advance for its own sake are not appropriate to this scheme.
- All applications must make a clear case for long-term sustained strategic support for the technology programmes. Thus, the proposal must cover a long-term vision that shows the value of the entire 10 years of appointment.
- Similarly, proposals whose innovation benefits are fully realisable from separate shorter duration projects are not appropriate and will not be supported. The Academy will not fund activities that are primarily aimed at addressing the clearly articulated needs of a single industry partner over the next five years and would be more appropriate for the [Research Chairs/ Senior Research Fellows scheme](#).
- Current RAEng Research Chairs are eligible to apply but cannot hold both awards simultaneously.
- The duration of the award is up to 10 years – an initial 5 years with the possibility of extension for a further 5 years following a full review of the award holder's achievements and outcomes, and the project's potential for commercialisation and impact over the next 5 years. Applications that are incomplete or do not adhere to the guidelines will not be accepted.



We would like to support you to achieve a balance between your personal and work demands. We are happy to discuss individual requirements and consider part-time and other flexible working arrangements.

Submission deadline

The submission deadline for this round of applications is **4.00pm GMT on Tuesday 11 April 2023**. Incomplete applications or applications submitted after this deadline will not be accepted.

Contact

If you have any further questions or queries related to this scheme, please email research@raeng.org.uk.

Mentoring and monitoring

The awardee will be assigned a mentor (a Fellow of the Academy) to provide independent expert advice and guidance throughout the duration of the award. The mentor will also formally monitor the progress of the Awardee for the Academy.

The awardee must submit an annual progress report to the Academy, which will be reviewed and evaluated by the assigned mentor. The Academy may also convene an annual review meeting, at which the awardee, the university's head of department/school, the mentor, and a member of Academy staff, will discuss progress and agree future plans.

Annual reports should follow the reporting guidelines that will be provided by the Programme Manager post award and will cover the progress made against the proposed programme, performance indicators, team size and dissemination activities undertaken over the past year.

Mid-term review

A full review will be carried out in the fifth year of the award to confirm funding to the full ten-year duration. The overall aims of the mid-term review are to assess research progress against original objectives and milestones, the commercialisation potential, and pathways to impact for the emerging technology.

The following criteria are weighted, emphasising the commercialisation potential and other pathways to impact including policy, transformative performance, translation into clinical activity:

- 1. Research progress to date** – against original objectives, milestones, and deliverables.
- 2. Commercialisation potential and pathways to impact** – existing and potential mechanisms and plans for protection and exploitation of research deliverables.

3. **Leadership of the emerging technology** – with particular focus on progressive leadership and demonstrated commitment to inclusion and sustainability. As well as technical leadership, future research direction and international positioning.
4. **Building a centre in the emerging technology** – to include an assessment of the following:
 - Research personnel
 - Organisation and management
 - Host institution support
 - Public engagement and outreach

Chairs that have not made satisfactory progress towards achieving economic and social impact will be terminated after the initial five years. Similarly, awards will be terminated where institutions have not fulfilled their commitments made at the time of application.

How to apply

All applications must be submitted via the Academy's online grants system available here: <https://grants.raeng.org.uk>. All applicants must first register and provide some basic login details to create a profile.

You must get approval and support for your proposal from your dean or pro-vice chancellor (or similar) and the research grants office prior to applying. We advise consulting them as soon as possible about a potential application.

The application should be submitted by the applicant. We recommend leaving plenty of time to complete the application form ahead of the deadline and thoroughly going through your application prior to submission.

While the guidance notes are embedded within the system itself, we recommend you keep this document to hand when completing the application form.

Many of the questions have prescribed word limits which are designed to keep your answers focused and indicate the level of detail we require. In such cases, the number of words you have used will be displayed beneath the question and updated in real time.

If you have any questions concerning the application or the online grants system, please contact research@raeng.org.uk.

Completing the application form

After logging into the online grants system and selecting Chair in Emerging Technologies in the 'Start application' section, you should be presented with the 'Instructions' screen. Here you will see some general instructions on how to use the

system, as well as links to each of the seven sections of the application form given below:

1. Applicant and university details
2. Project details and person specification
3. Case for support
4. Intended impact
5. Funding requested
6. Letters of support and declaration
7. Marketing and notifications

At any stage in the application process, you can save your work and return to it later. You can answer the questions in any order you like, so you may skip some sections to return to later if you wish. We recommend viewing the application early on to understand what is required. You should also ensure that you have all the necessary documentation to hand when you start completing the application, such as a copy of your CV or letters of support.

1. Applicant and university details

Q – Applicant contact details

Please provide your name, job title, and contact details including postal address and a telephone number. Some of your details and those of your institution should be automatically generated by the system, as you provided these at registration. Please ensure the contact email address is correct and will be valid for the entirety of the application process as this will be the main method of communication for your application.

Q – Contact details of employer and host organisation

Please provide the name and contact details for both your current employer and your chosen UK host university and, if applicable, the partner organisation to the university that will appoint you for the entirety of your award. Applications can be a joint appointment between a university and another UK organisation. Examples include National Laboratory, research institutes, or innovation organisations. Please mark the UK host university as the lead.

Q – Country of residence

Please state your country of residence at the time of application.

2. Project details and person specification

Here you will provide a few summary details of the application and details for the person specification.

Q – Resubmission question

Have you previously applied to the CiET programme? If answering yes, clearly articulate how your proposal differs from the previous submission.

Maximum 200 words.

Q - Project title

Your project title should be understandable to a non-specialist reader. The essence of the research should be captured in the title and should be as informative as possible. Maximum 10 words.

Q – Project start date and end date

Please enter your proposed start and end dates. Note: All proposals awarded in this round must start on **4 March 2024** and end on **3 March 2034**.

Q - Subject area

Select one single broad engineering category that best describes your research proposal. This will be used to guide and select reviewers and the panel members for the assessment process. If your research proposal fits into several categories, please pick the category that is most applicable to your proposal. Please see Annex 1 for further information.

Q – Subject keywords

Please add keywords to further define the area of your project. This will help us identify expert reviewers for your application.

Q – Declare conflicts of interest

Please list potential reviewers who would have a conflict of interest and therefore would not be able to review this application. Listing should be made in the following format: Dr John Xyz [ABC University], Prof. Jane Abc [XYZ University].

Q – Extended synopsis

Describe the programme and its expected outcomes in terms that can be understood and evaluated by a reviewer with extensive engineering and technology innovation expertise, but not necessarily any familiarity with the field of the proposal.

The extended synopsis should set out:

- The area of emerging technology, making a case for its strategic significance, and the potential for economic and social benefit to the UK.
- Your vision for the long-term application of the technology.
- The distinctive contribution that you can make to realising that vision with sustained personal support, including expected outcomes.

Maximum 700 words.

Q – Challenge areas related to your proposal

Please list any specific challenge area(s) where long-term impact could arise as a result of your project being awarded such as the four [Grand Challenges](#), [Sustainable Development Goals](#) and the areas highlighted in the [UK Innovation Strategy](#)

Maximum 250 words.

Q – Academy's strategic goals (optional)

How does the proposal align with the Academy's strategic priorities? Note this is not an assessment criterion and is for staff use only. We want to understand the extent to which our programmes meet our strategic aims. Your answer will not influence the decision and applications are judged purely on merit. The [strategic plan is available on the Academy website](#).

Maximum 250 words.

Q – Diversity and inclusion

The Royal Academy of Engineering strives to create cultures in which everyone can thrive, and we believe that diverse perspectives enrich our collective performance. What does diversity and inclusion mean to you, and what are you and your team doing to address it? Consider your team, collaborators and universities, the implications on your research design and topic and the overall contribution this will have on your success.

Maximum 250 words.

Q – Impact of COVID-19 (optional)

The Academy understands that the impact of the coronavirus pandemic on researchers and their work will be varied. If you wish, please provide a summary of how the pandemic has affected your research profile development that reviewers and panel members should consider. Reviewers and panel members will be advised to take into consideration the unequal impacts that COVID-19 related disruptions might have had on individuals.

The impact can include, but is not limited to, the following examples: pause on experiments/research plans, reduced ability to work due to additional caring responsibilities, delays in publishing/submitting a key paper(s) (please note pre-prints can be included in your publications list).

Maximum 250 words.

Q – Applicant's CV

The format and content of your CV is left to your discretion. You do not need to include contact details here again as these are included earlier in the application. Please include the following: your research track record, a list of key publications and conference presentations, PhD students supervised, awards and prizes received, and details of grant income secured. The CV should be uploaded as a PDF, but the file size should be less than 5MB.

Q – Applicant's track record

Outline how your professional experience and academic track record makes you suitable for this award, along with benchmarking your capabilities against peers and individuals and competitors in the same fields globally. You may also wish to include:



- Relevant previous collaborative work/partnerships with other researchers, research organisations, industries, or other beneficiaries, both nationally and internationally
- The economic and/or societal impact of your research
- Details of any external grant income secured (funder, value, Principle Investigator and Conflicts of Interest)
- Any other information regarding your research track record.

Maximum 500 words.

Q - Most significant achievements

Please describe three to five of your most significant achievements in your research career. We would like to emphasise that all achievements and outputs are welcome and considered valuable to the Academy, not just peer-reviewed publications. Outputs also include, and are not limited to: code, patents, spin-out companies, events, public engagement, and policy impact. Please briefly explain the significance of the achievement in a way that would be clear to a researcher from your discipline who may not be familiar with latest work in the field.

Maximum 500 words.

3. Case for support

This section should expand upon the case made in the Extended Synopsis.

Q – Area of emerging technology and vision

Please expand upon your description of the area of emerging technology you wish to pursue and your vision for the long-term application of the technology. Please make a case for the timeliness in the context of “emerging technology”. Expand upon the case for the distinctive contribution you make towards realising that vision with sustained personal support over the ten-year period of this award.

Maximum 700 words.

Q – Significance of the emerging technology

You should make a case for its strategic significance, relationship between the emerging technology and wider UK technological priorities, and the potential for economic and social benefit to the UK. Please consider in particular the potential for the UK to gain comparative advantage in disruptive or platform technologies, and the opportunity for the nation to capture greater value from these advances.

Maximum 500 words.

Q – Goals and objectives

Please state the goals and objectives for the project, distinguishing those of highest priority. All award holders are expected to:

- Lead major research, translation, and innovation programmes for key emerging technologies.
- Build world-leading centres of excellence in strategically important technologies, supporting their commercialisation and adoption.



- Build and maintain a strong network of industrial and other partners to facilitate technology commercialisation and the creation of significant UK economic and social benefit.

Please explain how your programme will deliver such goals. Please note that should you be supported, your performance will be assessed against these objectives.

Maximum 500 words.

Q – Research programme, methodology and key deliverables

Describe the ten-year work programme, indicating the research to be undertaken and the methodology to be used in pursuit of the research. Outline specific deliverables anticipated. Also include details on how novel, realistic/ambitious the project is, and include milestones by which to measure progress. The plan should be realistic and robust over the duration of the ten-year award.

Maximum 3,000 words.

Q - Gantt chart

Upload a Gantt chart in PDF format detailing the plan and timeline for the project over the **ten-year period**.

Q – Supporting documentation (optional)

Use this section to upload any relevant supporting documentation/images related to your project. Upload as a **single PDF** document with the documents in the order you would like them viewed and reference them in your response to the methodology questions.

Q – Risk management

Identify and assess any risks that may jeopardise the success of the project. Outline any contingency plans designed to mitigate these risks.

Maximum 300 words.

Q - Choice of host organization

Provide justification for the choice of your host institution (and if applicable, partner institution). Provide background to the research group/centre of excellence, including comparison with other centres in the UK and its scale (including how large is it, staff numbers, funding, research facilities).

Maximum 150 words.

4. Intended impact

The Academy's research programmes are aligned with the principles of the Declaration on Research Assessment ([DORA](#)). If research articles published in peer-reviewed journals are to be included in an application, we would therefore like to emphasise that the scientific content of a paper is much more important than publication metrics or the identity of the journal in which it was published. As part of the eligibility checks, applicants may be asked to resubmit if anything is found to contradict this. As part of the eligibility checks, applicants may be asked to resubmit if



anything is found to contradict this. We also strongly encourage realistic assessments of timescales and reach for social and economic impact, grounded in experience and evidence of translation of relevantly similar technologies to deployment. Unrealistic or ungrounded assessments will be perceived as a significant weakness by reviewers.

Q – Plans for outreach/public engagement

Describe plans for public engagement and outreach to increase impact of your research project over the ten years of the award. A CiET is a highly prestigious position, and the holder will be expected to be a leader and a champion for UK activities in their field and delivery of impact. Chairs should expect to be called upon by the Academy to take part in activities relating to the UK's innovation strategy and the implementation of their technology.

Maximum 300 words.

Q - Beneficiaries and impact

What are the benefits of this research? Quantify the extent of the benefits and identify potential beneficiaries. If the benefits do not directly relate to wealth creation and/or to improving the quality of life, give details of other beneficiaries and explain their importance. Please also indicate when these impacts are likely to accrue.

Maximum 300 words.

Q – Exploitation

How will the results be exploited? In the previous question, you explained what the benefits of the research are. Here you should explain how the benefits and impacts mentioned above will be achieved.

Identify what mechanisms are in place for identification, protection and subsequent exploitation of any deliverable which may arise from the research (including details of any specific collaborative agreement, where relevant). You should also indicate when these routes to exploitation are likely to be implemented over the ten years.

Maximum 800 words.

5. Funding requested

Q – Financial expenditure

The total value of each award can be up to a maximum of **£2.5 million** for the full ten years of award.

The Academy expects its Chairs in Emerging Technologies to use their award to gain funding from other sources. Where applicants hold existing grants where funds are being paid through other mechanisms for specific spend such as salary, to avoid double counting the CiET funds can be reinvested into the CiET programme in another way, providing it is sensible and justified.

Successful bids are funded at 80% of full economic costs (fEC) and the host institute must agree to find the remaining balance of 20%. Funding can come from a variety of sources including:

- From the host institute
- Other grant funding
- Commercial investment
- In-kind contributions e.g., industry collaboration

The funds, up to a maximum of £250,000 for each year of the award (4 March 2024 to 3 March 2034), can be used flexibly towards some, or all, of the following categories:

- Employment costs of the Chair, calculated at 80% of direct costs (gross salary and on-costs). Plus, up to 80% of associated indirect and estates cost, as calculated under the fEC methodology for that one FTE. Salary increments over the period of the project should be considered, but possible future pay awards should not be anticipated, and inflation should not be applied.
- Research staff, including administrative support staff calculated at 80% fEC (including direct employment costs, estates, and indirect costs).
- Technical support, calculated at 80% fEC (including direct employment costs, estates, and indirect costs.)
- Student costs at 100% direct costs (stipend plus tuition fee; including at international rate if appropriate) plus any experimental or bench costs. Please note that the Academy requires that all postgraduate students supported by a CiET fund are uplifted annually in line with UKRI published rates. However, this will not lead to increases to the award value and the cost of these increases must be met from the value granted at point of award. Further written policy regarding the Academy's expectations with respect to postgraduate students will be released in due course.
- Research expenses, including equipment, consumables, or similar, calculated at 100% direct cost. (Note that for any equipment worth over £10,000 funded from the grant, the Academy must give permission for any disposal or change of use to outside of the programme work proposed.)
- Other, including training or similar costs for the Chair supporting leadership, calculated at 100% direct cost (for example, mentoring training, media or public engagement and policy influencing are all considered eligible costs).
- The UK government will also be enforcing new policies on subsidy control before grants from this call are awarded. If these require changes to projects or costings for selected proposals (which is unlikely but possible if proposals have strong industrial links in subsidy-sensitive areas), then we will agree those with the recipient before grant award.

Costs that are not eligible include:

- Patent costs and other IP costs, as universities already receive funding for these from Higher Education Innovation Funding.
- The costs of an apprentice levy on any of its grants.



Please upload a detailed breakdown of costs within the categories in the costing table template provided. Please upload as a single PDF document. Applicants should consult with their university research support office about the completion of the required costings table.

Year 1:

- Direct employment costs of the award holder at 80% fEC
- Associated indirect and estate costs of award holder at 80% fEC
- Direct employment costs including research, support and technical staff at 80% fEC
- Associated indirect and estate costs of staff (including research, support and technical) at 80% fEC
- Research student costs (stipend and the UK student tuition fee) at 100%
- Research expenses at 100%
- Other costs (including training or similar) for award holder at 100%

Year 2:

- Direct employment costs of the award holder at 80% fEC
- Associated indirect and estate costs of award holder at 80% fEC
- Direct employment costs including research, support, technical staff at 80% fEC
- Associated indirect and estate costs of staff (including research, support and technical staff) at 80% fEC
- Research student costs (stipend and the UK student tuition fee) at 100%
- Research expenses at 100%
- Other costs (including training or similar) for award holder at 100%

Year 3:

- Direct employment costs of the award holder at 80% fEC
- Associated indirect and estate costs of award holder at 80% fEC
- Direct employment costs including research, support and technical staff at 80% fEC
- Associated indirect and estate costs of staff (including research, support, technical) at 80% fEC
- Research student costs (stipend and the UK student tuition fee) at 100%
- Research expenses at 100%
- Other costs (including training or similar) for award holder at 100%

[... And so on until Year 10 of the award]

Total amount: £2.5 million

Please note: the costing rules have changed slightly since the previous call to allow greater flexibility.



6. Letters of support and declaration

This section seeks confirmation for the support that the UK host university will provide. A declaration of support is also required from the applicant's chosen UK university grants/research office or equivalent.

The Academy expects the host institution to be committed to, and provide support that aligns with, principles set out in [The Concordat to Support the Career Development of Researchers](#) and [The Concordat for Engaging the Public with Research](#).

Q - Letter of support from the university

A pro vice-chancellor, dean or equivalent at the host university should provide this letter of support. It should be on headed paper, signed by the author and uploaded by the applicant as a PDF. The letter should address the points given below:

- 1) The institutional commitment to supporting the emerging technology field and the candidate as a global leader of the field. This should include the strategic alignment with university strategy and research priorities, including details of previous and planned investment and support to facilitate the development of this research group over the ten years of award.
- 2) A clear commitment to free the candidate from administrative duties and teaching that do not promote the emerging technology.
- 3) Details of how the university intends to reinvest any other funding for the employment costs recovered from the award to appropriately develop the institutions capability in the field.
- 4) Qualities and capabilities of the university department or school hosting the applicant and how this activity relates to its research strategy.
- 5) The institution's approach to commercialisation and intellectual property. This should include potential pathways to innovation of the emerging technology and the institution's commitment to supporting commercialisation of the technology, such as the support provided by the technology transfer office (or equivalent/alternative support).
- 6) Where organisational commitments are possible, we particularly encourage those that support development of early-stage researchers in this area.
- 7) Outline of the capabilities and achievements of the applicant, and why they have the qualities appropriate for global leadership in this field.
- 8) The host university can use this letter of support to highlight the impact of coronavirus pandemic on their support for the Chair if they wish. (Reviewers and panel members will be advised to take into consideration the unequal impacts that COVID-19 related disruptions might have on the host university's support for the Chair).

Q- Other letters of support

Please provide up to 3 letters of support from your key or most relevant collaborators. Please make sure they are dated, submitted on headed paper, and signed by a person of authority. Letters of support should corroborate the proposal, support the

methodology or design, or identify the future commercialisation and potential applications. They should not come from collaborators or funders that are being relied on to provide the full economic costs and will be reviewed as part of your proposal.

Q - Letter of appointment from the university (optional)

A letter of appointment from the university, which may be conditional on receipt of the award, if the candidate is based outside the UK university system. This should be left blank if the candidate is currently working at the university where the award is intended to be carried out over its entirety.

Q - University declaration letter

The declaration from the applicant's host institution/university should be completed by an appropriate officer/position from the central research grants office or equivalent (i.e., the body which administers grant applications).

The declaration letter should be on university headed paper and should carry the signatory's name, position, and the university's official stamp (if available).

The declaration letter must confirm the application has been approved by the university, and must contain the **exact wording** given in the box below, as well as any further remarks the university wishes to make:

On behalf of the university, I can confirm that I have read and accept the application guidance and other information regarding this scheme, which is provided on the Royal Academy of Engineering's website, and I also confirm that:

- The costs provided in this application are correct and sufficient to complete the award as envisioned.
- Any shortfall in funding discovered after the award has been made will be covered by the university.
- If awarded, the applicant will be given full access to the facilities, equipment, personnel, and funding as required by the application.
- The applicant will be employed by the university for the duration of the award.
- The applicant will be released from all teaching and administrative duties for the duration of the award, unless where these are desirable for impact of the research.
- I am authorised to approve the submission of applications for funding and this application has successfully met all our internal approval procedures.



Q – Applicant declaration

This section will ask the applicant to confirm that all the information they have submitted in their application is accurate and that they will update the Academy of any changes which may affect the project.

This section will also ask the applicant to acknowledge that the Academy will disclose the information contained within this application to external parties for the purpose of assessing the application.

7. Marketing and notifications

This section is optional, and any information provided will help the Academy to understand which of our marketing materials and methods are most successful, so enabling us to improve our future communications activities. Reviewers will not see this section.

Assessment of applications

Assessment of the applications will consist of a multi-stage process, described below.

The application should make a clear case for long-term impact and alignment with challenge areas, sustainable development goals or the UK Innovation Strategy. Applicants are asked to consider the novelty of the proposal in relation to the existing portfolio of [existing awards](#). The Academy may favour inward recruitment of international candidates who are currently based outside of the UK to bring world-leading talent to the UK.

Please be assured that the Academy requests anyone involved in reviewing applications to consider them in confidence. The Academy does not contact any third parties listed in the application and these details are handled in confidence.

The Academy's research programmes are aligned with the Declaration on Research Assessment (DORA), which is a set of principles aiming to improve the ways in which the output of research is evaluated by funding agencies, academic institutions, and other parties. The outputs from research are many and varied, and as a funder of engineering research the Academy needs to assess the quality and impact of these outputs to make awards – it is thus imperative that research output is measured accurately and evaluated wisely.

In the assessment of research output, we would like to emphasise that all outputs are welcome and considered valuable to the Academy. Outputs can include open data sets, software, publications, commercial, entrepreneurial, or industrial products, clinical practice developments, educational products, policy publications, evidence synthesis pieces and conference publications. Regarding research articles published in peer-reviewed journals, the scientific content of a paper is much more important than publication metrics or the identity of the journal in which it was published.

Stage 1: Initial Sift

The initial sift will be assessing applications based on the extended synopsis of the proposal, the applicant's CV and track record, and the university letter of support. This includes determining if the proposed research is within the scope of this scheme.

The initial sift will identify a longlist of applicants for further consideration, prioritising according to:

- The potential of the applicant to be a global leader in the emerging technology, as judged from their track record, scientific insight and originality.



- The potential of the area of emerging technology for economic and social benefit to the UK, and its wider strategic significance.
- The quality of the applicant's long-term vision for the development of the technology and their distinctive contribution to it.
- The host university's commitment to appropriately support the technology programme and the applicant.
- The suitability of the application to the Chairs in Emerging Technology, rather than other Academy schemes, such as a '[Research Chair/Senior research Fellowship](#)' award.
- Potential of the application to attract world-leading talent to the UK.

Stage 2: Expert Reviews

Each proposal in the longlist will be sent to expert reviewers, who are expert in the technology field(s) of the proposal and commercialisation within them.

Expert reviewers will consider all the submitted application materials. They will be asked to evaluate the factors considered by the initial selection panel above, as well as:

- The potential of the applicant and their vision to build a world-leading centre of excellence in the emerging technology.
- The quality of the research and innovation programme, its significance, goals and objectives, methodology and deliverables, approaches to risk and similar.
- The proposal's potential for economic and social benefit to the UK, and the viability of the approaches to commercialisation, industrial partnership and similar proposed to achieve that impact.
- The distinctive value of long-term personal support for the potential Chair in achieving the goals of the programme.

Stage 3 Interviews

Interviews are conducted by a generalist panel consisting of at least three Academy Fellows. Panellists will provide comments against the assessment criteria outlined above. The ranking of candidates during the preceding sift panels will have no bearing at interview, with all interview candidates considered to have equal standing. Following the interviews, the panel will rank the applications and select the top ranked candidates for awards.

Interviews are currently scheduled for **November 2023**. Dates will be confirmed in the Spring 2023 and shortlisted applicants will be invited for interview by mid-October 2023.

Interviews are planned to be held in person at the Royal Academy of Engineering, Prince Philip House, 3 Carlton House Terrace, London SW1 5AG. Please note this is subject to change and interviews may be held virtually.

It is expected that the applicants will be notified of the outcome of their interview by early December 2023. Further guidance will be provided at time of invitation (including potential to interview international candidates).

Timeline and schedule

The overall assessment schedule for this round of applications will be:

Milestone	Date
Application opens	Tuesday 13 December 2022
Application deadline	4.00pm (UK local time) Wednesday 11 April 2023
Stage 1 - Initial Sift Candidates informed of outcome of first stage sift panel	Mid July 2023
Stage 2 - Shortlisting Candidates informed of outcome of second stage shortlisting panel	Mid October 2023
Stage 3 - Interviews	Early November 2023
Award Candidates informed of the outcome of interview	Early December 2023
Awards Start	4 March 2024

Annex 1 – Engineering category

1) Civil, construction and environmental

Including aspects of civil and structural engineering; construction materials; earthquakes; wind and fire engineering; building engineering physics; construction management; numerical modelling; environmental engineering; water resources and flooding; offshore and coastal engineering; hydraulics; climate change and sustainability; waste management; geotechnical engineering; geomatics/surveying.

2) Materials and mining

Including metallurgy; metal forming; corrosion; failure analysis; structural integrity; non-destructive testing; inspection technologies; failure prevention; fabrication and repair technologies; welding and joining technologies; discovery and development of mineral resources; extraction and processing of minerals; mining engineering; materials performance; materials research; plastics and composites; structural materials (excluding materials specifically covered elsewhere).

3) Chemical and process

Including all aspects of chemical and process engineering; aspects of fuel technology; oil; coal and gas technologies; carbon; carbon sequestration; clean technology; combustion; catalysis; particulates; food processing; fermentation processes; pharmaceutical engineering; biotechnological processes.

4) Aerospace

Including all aspects of aeronautical engineering and aerospace manufacturing; turbomachinery and aerothermal engineering; avionics; radar systems; antennae; satellite systems; autonomous systems; aspects of systems engineering; airlines; materials for aerospace.

5) Transport and mechanical

Including all aspects of mechanical engineering; automotive; rail and marine engineering; transportation infrastructure; engines; turbomachinery; mechatronics; acoustics and vibrations; ultrasonics; heat and thermodynamics; fluid dynamics.

6) Manufacturing and design

Including manufacturing management and manufacturing process innovation; manufacturing business improvement and re-engineering; CAD/CAM; robotics for manufacturing; engineering design.

7) Electrical and electronic

Including electrical, electronic and control engineering; design for electronics; aspects of nanotechnology and semiconductor engineering; lasers; optoelectronics; photonics; microwave engineering; instrumentation; display technology; solid state electronics.



8) Energy and power

Including energy technologies; electric power and energy systems engineering; nuclear and renewable energy generation; energy infrastructure; management of energy and energy resources for generation, storage, and transmission; distribution and conversion of electric energy and power; electricity supply and energy conservation; hydrogen power; fuel cells.

9) Medical and bioengineering

Including all aspects of medical and biomedical engineering; orthotics; prosthetics; ultrasound for medicine; medical scanning and imaging; drug delivery; biomedical materials; tissue engineering; medical devices; medical robotics and computer assisted surgery.

10) Computing and communications

Including computational and software engineering; informatics; web and data science; telecommunications; mobile telephony; broadband; wireless spectrum; signal processing; television, film, and broadcasting; computer and video games; special effects.