



Engineering and  
Physical Sciences  
Research Council

## Quick Reference

**Please note that you must read this full Call document for guidance before submitting your proposal**

### Precision Manufacturing

**Call type: Invitation for full proposals**

**Closing date: 03 December 2020 at 16:00**

### Key Information

Funding available	Up to £7M is available through this call
Type of funding	Standard Research Grant
UKRI funder(s)	EPSRC

### Overview

This call is open only to those who were successful at the outline stage of the Precision Manufacturing call and as such, have been invited to submit a full proposal. The EPSRC Manufacturing the Future Theme will provide up to £7M to support a portfolio of precision manufacturing research projects.

**Assessment Process:** Invited full proposals will undergo postal peer review followed by a prioritisation panel, resulting in a rank ordered list. Funding decisions will be made May 2021.

### Key Dates:

Activity	Date
Call opens in Je-S for invited proposals	16 October 2020
Closing Date for full proposals	16:00 03 December 2020
Prioritisation Panel	w/c 26 April 2021
Funding Decision	May 2021

Only **invited full proposals** will be accepted to this call. There is no requirement for an institutional statement of support.

**Contacts:**

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[Stephen.gilligan@epsrc.ukri.org](mailto:Stephen.gilligan@epsrc.ukri.org)
- [ManufacturingPeerReview@epsrc.ukri.org](mailto:ManufacturingPeerReview@epsrc.ukri.org) (Manufacturing the Future Theme central email inbox)

For help and advice on costings and writing your proposal please contact your Research Office in the first instance, allowing sufficient time for your Organisation's submission process.

Any queries regarding the submission of proposals through Je-S should be directed to:

- The Je-S helpdesk ([JeSHelp@je-s.ukri.org](mailto:JeSHelp@je-s.ukri.org) – 01793 444164)



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## Precision Manufacturing

**Call type: Invitation for full proposals**

**Closing date: 16:00 03 December 2020**

**Related themes: Digital economy, Energy, Engineering, Healthcare technologies, ICT, Manufacturing the future, Mathematical sciences, Physical sciences**

### Contents of this call document

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### Opportunity Summary

- This opportunity is open only to those who have been invited to submit a full proposal for this call.
- There is £7M available to support a portfolio of precision manufacturing research projects
- Proposals should focus on excellent novel research into technologies and/or platforms required to enable manufacturing at scale, with high precision that can approach the nanoscale.
- Proposals must lie within the remit of the EPSRC Manufacturing the Future theme
- This call uses standard UKRI eligibility
- Applicants who are invited to submit a full proposal will be required to include a User Engagement Strategy as part of the full proposal paperwork

Submissions to this call **will** count towards the EPSRC Repeatedly Unsuccessful Applicants Policy.

### Who can apply

Only applicants who were successful from the outline stage and have been invited to submit a full proposal can apply.

Standard EPSRC eligibility rules apply: Research grants are open to UK higher education institutions, research council institutes, UKRI-approved independent research organisations and NHS bodies with research capacity. Read the guidance on institutional eligibility <https://www.ukri.org/funding/how-to-apply/eligibility/>.

You can apply if you are resident in the UK and meet at least one of the bullets below:

- are employed at the submitting research organisation at lecturer level or equivalent
- hold a fixed-term contract that extends beyond the duration of the proposed project, and the host research organisation is prepared to give you all the support normal for a permanent employee
- hold an EPSRC, Royal Society or Royal Academy of Engineering fellowship aimed at later career stages
- hold fellowships under other schemes (please contact EPSRC to check eligibility, which is considered on a case-by-case basis).

Holders of postdoctoral level fellowships are not eligible to apply for an EPSRC grant.

If you are currently restricted under the Repeatedly Unsuccessful Applicants Policy, you will only be able to submit one full proposal (as PI or CO-I) during the 12 month restricted period.

## What we're looking for

### Synopsis

The EPSRC Manufacturing the Future (MtF) theme are looking to invest in a portfolio of excellent novel research into technologies and/or platforms required to enable manufacturing at scale, with high precision that can approach the nanoscale. Up to £7M will be provided for this call, for projects expected to be up to 3 years in duration.

Proposals within scope of this call **must** be focussed on enabling precision composition (for example, at nano-scale, atomic scale) to be done at large scale 'manufacturability', using advanced materials and multi-material processing. Research should be on products or platform development.

This call is for Standard Research proposals.

### Scope

The MtF theme has recently refreshed its research priorities with input from members of the manufacturing research and innovation community. "Precision Made and Scalable at Cost" has emerged as one of the new priorities.

Precision refers to form, function, scale, aspect ratio etc. Precision manufacturing addresses technologies or processes where parts can be fabricated with very high precision and exceptionally low tolerances, over an arbitrary large size – manufacturability. "Precision Made and Scalable at Cost"

therefore is to highlight a priority for research into the understanding of how to deliver into a material, at large-scale (manufacturability), highly accurate precision that can approach the nanoscale. Supporting research in this area will therefore:

- Reduce costs of manufacturing nanoscale products and nanoscale precision.
- Expand the capability to manufacture products using advanced materials.
- Encourage UK-based innovation, manufacturing and platform creation with a view to generate machines/capability which has domestic innovation at its core and does not rely on 'bought in' technology
- Deliver methods and technologies which allow for scalable production and manufacturing of precision materials

This call will fund a portfolio of novel research that addresses one or more of the above, whilst building new capabilities and processes.

For more information about EPSRC's portfolio and strategies, see our website: <https://epsrc.ukri.org/research/ourportfolio/>

Inclusion of Project Partners is encouraged, although not a formal requirement of this call. All applicants are however encouraged to think more broadly about industrial engagement, including building in plans to engage with a range of relevant manufacturing companies, including SMEs, throughout the project. A User Engagement Strategy describing this approach must be submitted as part of the full proposal, and the appropriateness of this will be assessed under the Applicant and Partnerships criterion.

Full proposals should not differ significantly from the associated Outline Proposal. EPSRC reserves the right to reject, without reference to peer review, any proposals where this advice has not been followed.

## **Funding Available**

There is up to £7M available through this call for projects expected to be up to 3 years in duration. Grant size should be in line with Standard Research grants. Applicants intending to request >£2.5M are strongly advised to contact and discuss with EPSRC staff in advance of submission.

Equipment over £10,000 in value (incl. VAT) is not available through this call. Smaller items of equipment (individually under £10,000) should be in the Directly Incurred - Other Costs heading.

For more information on equipment funding, please see: <https://epsrc.ukri.org/research/facilities/equipment/>

## **How to apply**

This document relates to the submission of full proposals. For reference, the Outline (stage 1) call document may be found at <https://epsrc.ukri.org/funding/calls/precision-manufacturing-outline-call/>

Although proposals may be multi-institutional, only one application form should be submitted for each bid. **Joint proposals on separate Je-S forms will not be accepted.**

Full proposals invited following a successful outline stage must have the 'Related Grant' field completed in Je-S. Please use the option 'Successful Outline'.

Applicants should ensure they are aware of and comply with any internal institutional deadlines that may be in place. You should prepare and submit your proposal using the Research Councils' Joint electronic Submission (Je-S) System (<https://je-s.rcuk.ac.uk/>).

When adding a new proposal, you should go to documents, select New Document, then select:

- Council 'EPSRC'
- Document type 'Standard Proposal'
- Scheme 'Standard'
- On the Project Details page you should select the 'Precision Manufacturing – Full Proposals' call.

After completing the application:

- You must 'Submit document' which will send your application to your host Organisation's administration
- Your host Organisation's administration is required to complete the submission process. Applicants should allow sufficient time for your Organisation's submission process between submitting your proposal to them and the call closing date

EPSRC must receive your full proposal application by **16:00 3 December 2020**.

As well as the Joint Electronic Submission (Je-S) Application Form, the following documents must be submitted:

<b>Attachment Type</b>	<b>Maximum Page length</b>	<b>Extra Guidance</b>
Case for Support	Eight pages	Comprising up to two A4 sides for a track record, and six A4 sides describing proposed research and its context.
Workplan	One page	Should be illustrated with a simple diagrammatic work plan, such as a Programme Evaluation and Review Technique (PERT) or Gantt chart.
Justification for Resources	Two pages	
CVs	Two pages each	For named and visiting researchers, and researcher co-investigators only.
Project Partner Letters of Support	No page limits	Must be included from all named project partners. Must be on headed paper, and be signed and

		dated within six months of the proposal submission date.
Additional Document	Two pages	A <b>User Engagement Strategy</b> must be included under this attachment type.
Letters of Support	No page limits	<b>Optional:</b> In exceptional circumstances a maximum of three letters can be submitted.
Technical assessment	No page limit	<b>Optional:</b> For the use of a major facility, where applicable.
Proposal Cover Letter	No page limit	<b>Optional:</b> The cover letter can be used to highlight any important information to EPSRC. This attachment type is not seen by reviewers or panel members.

You should attach your documents as pdfs to avoid errors. They should be completed in single-spaced Arial 11 font or similar-sized sans serif typeface

For advise on writing proposals see

<https://epsrc.ukri.org/funding/applicationprocess/preparing/>

EPSRC will not fund a project if it believes that there are ethical concerns that have been overlooked or not appropriately accounted for. All relevant parts of the Ethical Information section must be completed. Further guidance on completing the Je-S form can be found at <https://je-s.rcuk.ac.uk/Handbook/pages/GuidanceonCompletingaStandardG/EthicalInformation.htm>. EPSRC guidance can be found under Additional Information.

## User Engagement Strategy

Successful applicants will be required to develop and execute a strategy for engaging with potential users of the research funded in the project (resources for this activity can be requested and must be justified in the application). **An initial version** of this strategy should be submitted as a two-page document as part of this full proposal stage. This should cover the points highlighted below, and will be assessed under the Applicant and Partnerships Criterion. A mandatory Additional Document has been included on the Je-S form for this purpose. This strategy should be reviewed and updated regularly as part of the formal management of the grant.

The strategy should cover:

- how and when potential users have been / will be identified;
- what form the engagement will take;
- what steps will be taken to ensure that outputs of the research are made available to potential users;
- suitable metrics for determining the success of the strategy in delivering value to users.

This requirement has been included in this call to reflect the importance of engaging with manufacturing industries as part of realising the benefits of the fundamental research we support.

Version 29 September 2020

# How we will assess your application

## Assessment Process

### Stage 2 – Full Proposal to Prioritisation Panel

Applicants who are successful at Stage 1 will be invited to submit a full proposal which will be assessed through postal peer review. Applicants will be notified via email and will be provided with details of how to submit a full proposal. Reviewers will be assessing applications against the full proposal assessment criteria provided. Full proposals must be submitted by **16:00 03 December 2020**.

Applications that receive sufficient support from reviewers will be taken to a prioritisation panel. The panel will assess proposals against the full proposals assessment criteria and produce a rank ordered list. It is anticipated that the prioritisation panel will take place in April 2021.

In the event of this call being substantially oversubscribed as to be unmanageable, EPSRC reserve the right to modify the assessment process.

## Assessment Criteria

Full proposals will be assessed against the following criteria:

### Research Quality (Primary Criterion)

- Relevance to the UK manufacturing research base and potential to provide the UK with unique capability.
- Novelty, relationship to context, timeliness and relevance to identified stakeholders.
- Ambition, adventure and transformative aspects or potential outcomes.
- Suitability of proposed methodology and appropriateness of the approach to achieving impact.

### Importance (Secondary Major Criterion)

- Evidence of how the proposed research contributes to:
  - Maintaining health of other research disciplines.
  - Addressing key UK societal challenges.
  - Current or future UK economic success and/or enables future development of key emerging industry(ies).
- Meets national strategic needs by establishing or maintaining a unique world leading research activity (including niche capability areas).

- Fits with and complements other UK research already funded in the area or related areas, including the relationship to the EPSRC portfolio, [Research Area strategies](#) and [Delivery Plan](#).

### **Fit to Call (Secondary Major Criterion)**

- Alignment of research programme to aims and objectives of call

### **Applicant and Partnerships (Secondary Criterion)**

- Ability to deliver proposed project
  - Appropriateness of the track record of the applicant(s).
  - Balance of skills of project team, including collaborators.
- Appropriateness of the User Engagement Strategy and any resources requested for it.

### **Resources and Management (Secondary Criterion)**

- The effectiveness of the proposed planning and management arrangements.
- Any equipment requested, or the viability of the arrangements described to access equipment needed for this project, and particularly on any university or third-party contribution
- The appropriateness and justification of the requested resources.
  - Include any requested for activities to either increase impact for public engagement or to support responsible innovation.

### **Feedback**

Feedback will be provided in the form of reviewer comments plus information on the panel provided on Grants on the Web.

### **Nominating Reviewers**

As part of the application process you will be invited to nominate up to three potential reviewers who you feel have the expertise to assess your proposal. Please ensure that any nominations meet the EPSRC Policy on conflicts of interest.

For more information about the reviewer selection process please see the related content links.

### **Guidance for reviewers**

When completing your assessment please use the section marked 'Call Specific Criteria' to address the Fit to Call criterion.

Information about the EPSRC peer review process and guidance for reviewers can be found at:

<https://epsrc.ukri.org/funding/assessmentprocess/review/>

Guidance for reviewing standard grants can be found here:

<https://epsrc.ukri.org/funding/assessmentprocess/review/formsandguidancenotes/standardgrants/>

## **Additional Information**

### **Background**

In 2018 MtF held a strategic retreat<sup>1</sup> to explore the future manufacturing research and innovation landscape and examine future strategic opportunities. The outputs were further developed through a series of community engagement activities<sup>2</sup>, forming the basis of the MtF Strategic Priorities workshop<sup>3</sup>, where the suggestion of "Precision Synthesis" as a priority area for future manufacturing research was made. This covers yield, composition and for example surface or tribological properties. atomic precision over cm scale lengths.

Subsequent discussions with the MtF Strategic Advisory Team (SAT) and input from the Early Career Forum in Manufacturing Research (ECF) developed "Precision Synthesis" into "Precision Made and Scalable at Cost." It was emphasised that a priority should be placed on advancing manufacturing research in this area.

## **Supporting Documentation**

Reports for the retreat and strategy refresh workshop can be found here:

- <https://epsrc.ukri.org/newsevents/events/manufacturing-future-retreat-2018/>
- <https://epsrc.ukri.org/newsevents/pubs/mtfregionalmeetingsreport201819/>
- <https://epsrc.ukri.org/files/newsevents/report-of-the-manufacturing-the-future-research-priorities-workshop/>

## **Related Content**

- [Outline Call Document](#)
- [Resubmissions](#)
- [Repeatedly unsuccessful applications](#)
- [Equipment](#)
- [Use of animals](#)
- [Responsible research and innovation](#)
- [Ethical considerations](#)
- [Equality, Diversity and Inclusion](#)
- [Reviewer selection](#)
- [Conflicts of interest](#)
- [DORA](#)

The Equality Impact Assessment undertaken for this activity can be found at <https://epsrc.ukri.org/files/funding/calls/2020/precision-manufacturing-eia/>

# Change log

Name	Date	Version	Change
Becky Cheesbrough	29/09/2020	1	N/A