Instructions for the Kvantum research project 2021 – 2024 application

The different parts of the application (A – H) should be combined in the order A – H below and submitted as a single pdf-file. The file should be named with the responsible PI’s lastname_firstname-Kvantum_application and sent electronically to the Registry office (kirjaamo) of the University of Oulu (kirjaamo@oulu.fi) by January 10th, 2020.

Structure and contents of the application

Use font type Times New Roman (or corresponding) with the font size 12, line spacing 1,15 and margins 20 mm.

A. Cover page

The application will be reviewed by international experts. Please include the following information on the cover page of your research plan:

1. Contact information of the Principal Investigator (PI) of the research project (Name, degree and job title, Research Unit, Faculty/Institute and e-mail and mailing address); add the information of possible co-PIs. Indicate who is the responsible PI.
2. Project title
3. 5 keywords
4. Select the project’s strategic focus area Creating sustainability through materials and systems or Earth and near-space system and environmental change.
5. The max. 2 main research fields and max. 3 sub fields as text according to the Academy of Finland (AF) instructions.

B. Abstract (max. 2500 characters)

The abstract is a summary of the research plan that provides an overview of the scientific content of the project concerned. It is important that you prepare the abstract carefully to facilitate the review. The abstract is confidential information.

The abstract should include the following information:

1. Brief description of the scientific and societal objectives of the research
2. Research methods
3. Research data
4. Expected results and impact

C. Public project description (max. 1000 characters)

If a project is granted funding for Kvantum project, this description of the project is published on University of Oulu website. The description (in English) is written by the applicant when drafting the application. The public description helps the University of Oulu, researchers and stakeholders to disseminate information on Kvantum’s research projects. The description should therefore be as readable as possible and written for a nonscientific audience.

It should cover the following information:
the topic of the research and the rationale
the data and research methods to be used (interviews, statistical data, archive materials, etc.)
the site of research
the significance and objectives of the research from the perspective of society and science
any other interesting aspects
if relevant, a link to the researcher’s website, if it contains more information on the topic
if relevant, references to previous publications that are readily available at public libraries or on the internet.

The applicants are responsible for the content, clarity and style of the descriptions.

D. Research plan
Max. 12 pages including figures and tables. Use font type Times New Roman (or corresponding) with the font size 12, line spacing 1,15 and margins 20 mm. Bibliographic references must be added directly into the text (Author(s) Year). The bibliography (no more than 2 pages) does not count towards the length of the research plan. All the mentioned guidelines and the research plan structure must be followed.

D1. Aim and objectives
1.1. Significance of the research project in relation to current knowledge, premise underpinning the research:
✓ How the project is linked to previous international and/or national research (state of the art).
✓ Research premise, aims and objectives of the project.

1.2. Research questions and/or hypotheses
1.3. Expected research results and their anticipated scientific impact, potential for scientific breakthroughs and for promoting scientific renewal:
✓ Impact within the scientific community.
✓ Project’s novelty or added value for science.

1.4. Special objective of Kvantum call:
✓ Justifications for how the project will address the objectives and questions of Kvantum focus area(s).

D2. Implementation
2.1. Work plan and schedule:
✓ Detailed description of the research to be performed in the project, starting from objectives, scientific sources and preliminary data (if available).
✓ Description of different research tasks, their implementation and interconnections.
✓ If necessary, description of responsibilities for and management of research tasks.
✓ Schedule for project implementation: research tasks and work packages, distribution of personnel resources, and project milestones and deliverables.

2.2. Research data and material, methods, and research environment:
✓ Research data to be used, justifications and information on data collection/acquisition and use, considering issues such as intellectual property rights (IPR).
✓ Research methods and how they will contribute to answering the research questions or confirming the hypotheses, or how they will support the chosen approach.
✓ Description of local, national and/or international research environment including research
infrastructures.

2.3. Risk assessment and alternative implementation strategies:

- Critical points for success, probability of risks and alternative implementation strategies.

D3. Research team and collaborators

3.1. Project personnel and their relevant merits:

- Names and/or level of education of the project’s researchers.
- Tasks and roles as well as key merits of the responsible project PI and the project’s co-PIs and other researchers.
- Project’s links to previous research by the responsible PI and the research team.
- How researcher training will be organised and research careers promoted.

3.2. Collaborators and their key merits in terms of the project:

- Local, national and international collaborators of key significance to project implementation as well as their merits.
- Justifications for choice of collaborators.

D4. Responsible science

4.1. Research ethics:

- Information on ethical issues (e.g. ethical governance procedures, informed consent, anonymity of subjects and withdrawal from research) that concern the chosen topic, methods and data.
- Information on the possible research permits granted or pending.
- More information: responsible science

4.2. Promoting open science:

- Publication plan that supports open access.
- Data management plan that supports reuse of data (added as part D8, does not count towards the length of the research plan).
- More information: open science

4.3. Promoting equality and non-discrimination:

- Information on how the project will promote equality and non-discrimination within itself or in society at large.
- More information: equality

D5. Societal effects and impact

5.1. Effects and impact beyond academia:

- Brief description of the appeal, utilisation potential and application areas of the research results beyond the scientific community.
- For instance, provide a self-assessment of the expected societal impact of the research in the long or short term. Impact beyond academia may come in many different forms depending on the research field and the project. For example, science is a source of wealth and prosperity, but it also improves our understanding of the world and enhances the level of civilisation, supports the development of good practices and informs decision-making.
- More information on the wider impact of research: effects and impact

5.2. Considering principles of sustainable development:
Brief description of how the project promotes one or more of the eight goals for sustainable development: equal prospects for wellbeing, a participatory society for citizens, sustainable employment, sustainable society and local communities, a carbon-neutral society, a resource-wise economy, lifestyles respectful of the carrying capacity of nature and decision-making respectful of nature.

More information: sustainable development

D6. Funding of the project

How the project’s research expenses are/will be covered (exclude the internal strategic funding for the salary of doctoral student(s) and postdoc in 2021 - 2024).

Use the budget table:

<table>
<thead>
<tr>
<th>External funding from:</th>
<th>Information of the funding (project name, possible consortium etc.)</th>
<th>Funding period year-year</th>
<th>Amount of funding 1000€</th>
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<td>Academy of Finland</td>
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<td>Business Finland</td>
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<td>Other domestic funds and foundations</td>
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<td>EU research funding</td>
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<td>Other international competed funding</td>
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<td>Domestic and international companies</td>
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<td>Internal Univ. Oulu Funding</td>
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<tr>
<td>Grand total</td>
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**PLANNED TOTAL FUNDING OF THE RESEARCH GROUP:**

<table>
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<tr>
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</table>
Other external funding

Internal Univ. Oulu funding

Grand total

D7. Bibliography (max. 2 pages, not counted in the 12 pages of the research plan)
List of all the sources used in the research plan.

D8. Data management plan (DMP) that supports reuse of data
- Use the AF DMP template and add it here.
- For the questions about DMP, please contact the data specialist or researchdata@oulu.fi helpdesk.
- Data management plan does not count towards the length of the research plan.

E. List of the 10 most important publications for the project
Enter the ten most important publications for the project (with open access links if possible).

F. List of PhD theses produced under the supervision of the project members from 2014 onwards
Enter the doctoral candidate’s name, title of the doctoral thesis, date of dissertation and supervisor’s name.

G. Responsible PI’s and other PIs’ CVs
The CV, done according to the AF instructions, should be no more than two pages long.

H. Responsible PI’s and other PIs’ lists of publications from 2014 onwards
The PI’s list of publications should be done according to the instructions of AF.

PLEASE NOTE: For the first round, an independent international scientific evaluation panel nominated by the Rector of the University of Oulu will evaluate all the applications. For the second round, the panel will select 26 of the applications to be presented during the panel’s site visit at the University of Oulu in spring 2020. The evaluation process is based on criteria similar to those used by the Academy of Finland. These include scientific quality, innovativeness and novelty value of the research as well as its impact within the scientific community, competence of research team in terms of project implementation, feasibility of research plan (incl. research ethics), quality of research environment and collaborative networks, researcher mobility and researcher training and added value of collaboration as in the latest Academy Project evaluation guide. In addition, the suitability to Kvantum focus areas will be evaluated.

If you have any questions, do not hesitate to contact us: aija.ryyppo@oulu.fi and pirjo.taskinen@oulu.fi