Forskningsrådet

Assessment of grant application submitted to the Research Council of Norway

Grant application

Project number	315420
Project title	Reactor and process development for continuous non-catalytic fast hydrothermal liquefaction of lignin residue
Project manager	Tran, Quang Khanh
Project owner	NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU
Application type	Researcher Project / Researcher Project for Scientific Renewal
Topic	Ground-breaking research
Programme/Activity	Forskerprosjekt 2020
Case officer	Bjørnar Solhaug Komissar

Confirmation

By completing and submitting this form, I / we confirm the following (applies for the individual referee or the referee panel):

- I/We have no conflicts of interest that would prevent me/us from conducting this assessment. See Regulations on Impartiality and Confidence in the Research Council of Norway.	Yes
- I/We have read and understood both the criteria I/we have been asked to use for assessing the application and the description of the scale of marks. The scale of marks is to be applied as an absolute scale, i.e. marks are to be determined for each grant application independently and not relative to other applications that the panel/referee is assessing.	Yes
- I/We understand and accept the guidelines for assessing applications for the Research Council of Norway. See Guidelines for referees/panels who assess applications for the Research Council of Norway.	Yes
- I am/We are qualified to conduct this assessment.	Yes

Summary of marks

Criterion	Mark
Excellence	7
Impact	6
Implementation	7
Overall assessment of the referee/panel	7

Criteria

Excellence

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The extent to which the proposed work is ambitious, novel, and goes beyond the state-of-the-art
• Scientific creativity and originality.
• Novelty and boldness of hypotheses or research questions.
• Potential for development of new knowledge beyond the current state-of-the-art, including significant theoretical, methodological, experimental or empirical advancement.

The quality of the proposed R&D activities
• Quality of the research questions, hypotheses and project objectives, and the extent to which they are clearly and adequately specified.
• Credibility and appropriateness of the theoretical approach, research design and use of scientific methods. Appropriate consideration of interdisciplinary approaches.
• The extent to which appropriate consideration has been given to ethical issues, safety issues, gender dimension in research content, and use of stakeholder/user knowledge if appropriate.

The panel finds this to be a very strong proposal, with bold and ambitious objectives, targeting an innovative process design to resolve key issues around HTL biomass conversion. There is considerable originality and novelty. The research project is well presented and the objectives clearly stated
The panel agrees that the engineering concept, experimental validation, modelling methods and collaboration with a leading industrial partner in total present an excellent work plan and methodology. This is a fine combination of an innovative and at the same time feasible approach.
The panel also notes that the overall approach and process design can have wider application beyond the chosen HTL concept.
The panel conlcudes that the excellence of this proposal is outstanding.

Selected mark : 7 - Exceptional
The proposal addresses all relevant aspects of the criterion exceptionally well. Shortcomings are not present, or only very minor.

Impact

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Potential impact of the proposed research
• Potential for academic impact:
The extent to which the planned outputs of the project address important present and/or future scientific challenges.
• Potential for societal impact (if addressed by the applicant):
The extent to which the planned outputs of the project address UN Sustainable Development Goals or other important present and/or future societal challenges.
• The extent to which the potential impacts are clearly formulated and plausible.

Communication and exploitation
• Quality and scope of communication and engagement activities with different target audiences, including relevant stakeholders/users.

The panel agrees that the proposed research can have a strong academic impact in extending current numerical modelling capabilities and in advancing understanding of the physical phenomena present.
The panel also feels that there can be a strong societal impact. Replacement of fossil fuels with oil derived from lignin residues will contribute to sustainable development, reducing the environmental impacts associated with the utilization of fossil fuels.
The panels notes that these potential impacts are clearly stated in the proposal and that the impacts of the work can go well beyond the conversion process that is the focus of the project (which is a good choice).
The panel also makes the further, but minor, comment that the larger potential techno-economic advantages for biorefining receive less attention
The dissemination plans are, in the panel's view, extensive and effective.
The panel concludes that the impact of this proposal is excellent.

Selected mark : 6 - Excellent
The proposal successfully addresses all relevant aspects of the criterion. Only minor shortcomings are present.

Implementation

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The quality of the project manager and project group
• The extent to which the project manager has relevant expertise and experience, and demonstrated ability to perform high-quality research (as appropriate to the career stage).
• The degree of complementarity of the participants and the extent to which the project group has the necessary expertise needed to undertake the research effectively.

The quality of the project organisation and management
• Effectiveness of the project organisation, including the extent to which resources assigned to work packages are aligned with project objectives and deliverables.
• Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role.
• Appropriateness of the proposed management structures and governance.

The panel agrees that the project manager has a strong research record in this application area and experience in research supervision.
The panel notes that there is a good and balanced mix of academic and industrial collaborators with highly relevant expertise an excellent position in the international arena.
The panel finds no real weaknesses in the design and management of the program on all key criteria.

Selected mark : 7 - Exceptional
The proposal addresses all relevant aspects of the criterion exceptionally well. Shortcomings are not present, or only very minor.

Overall assessment of the referee/panel

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Overall assessment of the referee/panel based, on the criteria Excellence, Impact and Implementation.

The panel agrees that this is a strong research proposal, well presented and well planned, with ambition, originality and strong academic and societal impacts with extensive dissemination plans.
The pane notes that the project manager has a strong research record and that the collaborating institutions bring the right blend of expertise.
The panel concludes that this is an outstanding research proposal.

Selected mark : 7 - Exceptional
The proposal is of exceptional quality, and of the very highest international standard. All relevant aspects of the criteria are exceptionally well addressed. Shortcomings are not present, or only very minor.

Special points to consider

Comments to special points to consider