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Our reference  
Position Executive Board

General Affairs Department  
Executive Board

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## **Position of the Executive Board of Eindhoven University of Technology regarding the assessment of the department Mechanical Engineering**

In December 2019 an international review committee assessed the research in Mechanical Engineering of the period 2013-2018 at Eindhoven University of Technology. The committee assessed the quality and relevance of research conducted in the period 2013-2018, the viability, and the quality of the research training, research integrity and diversity. The assessment was carried out using the Standard Evaluation Protocol 2015-2021 for the research assessment of public organizations in the Netherlands.

The assessment committee consisted of:

- Viggo Tvergaard, *Emeritus Professor of Solid Mechanics at Technical University of Denmark*
- Wolfgang Wall, *full Professor and founding director of the Institute for Computational Mechanics at Technical University of Munich*
- Gábor Stépán, *Professor of Applied Mechanics, and former dean of the Faculty of Mechanical Engineering at Budapest University of Technology*
- Andrew Alleyne, *Ralph & Catherine Fisher Professor and Director of the NSF ERC on Power Optimization for Electro Thermal Systems (POETS) at the University of Illinois, Urbana-Champaign.*
- Wolfgang Arlt, *Emeritus Professor of Separation Science and Technology at Friedrich-Alexander-University Erlangen-Nuremberg*
- Sébastien Candel, *Emeritus Professor of Combustion Science at CentraleSupélec, University Paris-Saclay*
- Beth Pruitt, *Professor of Bioengineering and Systems Biology at the University of California Santa Barbara*
- Erkin Ask, *PhD, Department of Electrical Engineering at University of Twente*

**The committee made the following general assessment of the department:**

“The review committee was asked to assess the scientific quality and the relevance and utility to society of the research conducted by the Department in the reference period 2013-2018, as well as its strategic targets and the extent to which it is equipped to achieve them.

Its overall impression is of an excellent Institute in which there is a strong sense of professionalism, impressive commitment and very high levels of performance in terms of publications in clearly identified, leading journals. The physical infrastructure for conducting this research is comparable to top level research programmes throughout the world.

The definition of research directions of the mechanical engineering department, as well as the active participation in training programmes and especially the interaction with various stakeholders in the many externally funded research projects in the institute, yield clear evidence that the scientific work of the institute also has a very high societal relevance and impact.

The department is very well equipped for the future. In the opinion of the committee, steady signs of quality improvement could be observed across the review period; ME has had very marked success in grant winning, it is securing added societal partnerships and it is fostering synergy and dialogue internally. The fact that the department board is established from strong academic personalities and that it is wellrehearsed is especially appreciated. Future challenges include improving the time for research, hiring highly qualified candidates for new positions, attracting female researchers and more collaboration within the Department and beyond.

With regard to the PhD programme there is a good supervising structure both intellectually and procedurally. In terms of education, the university offers a set of personal development (PROOF) courses. Disciplinary courses are primarily offered through Research Schools of which the Research School, Engineering Mechanics, is commissioned by the department. The committee is of the opinion that EM amply fulfils its mission and goals. It offers a broad range of unique classes, seminars and workshops that are the core of engineering mechanics and play an important role in the training of PhD students.

The committee is satisfied with the processes in place for ensuring research integrity.

Gender diversity is low at faculty level relative to 50% in society, while higher than the diversity of student body at all levels. The ability to welcome and develop a more diverse student body will be greatly supported by continuous improvement to the culture and environment, e.g., by identifying and celebrating the success and contributions of ME female role models from industry or academic researchers from outside TU/e.

**Recommendations of the review committee:.**

- Keep a good balance between fundamental and applied research;
- Develop more systematic cooperation, collaboration and interaction between the different sections;
- Put more emphasis in getting ahead of industry in addressing some of the grand challenges that are facing society in the areas of energy, mobility, water, environment and health;
- Improve international cooperation further by a more efficient use of the existing sabbatical system;
- Examine best practices for creation and maintenance of an inclusive environment;
- Maintain high quality space infrastructure commensurate with growth in students and staff. This is for both the near-term transition and with the future state of the new building;
- Consider some flexibility in the implementation of the diversity hiring targets and how to manage this approach to minimize unintended consequences;

The Executive Board highly appreciates the work of the committee and the recognition of the quality of the research of TU/e's department Mechanical Engineering. It is equally appreciative of the many concrete recommendations of the committee. Part of the recommendations will also be taken up at a university level:

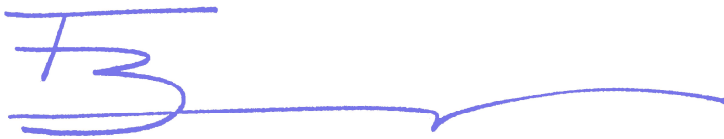
- TU/e has organized its cross-disciplinary research in three institutes: EIRES (on energy related research), ICMS (on complex molecular systems) and EAISI (on artificial intelligence in engineering). One of the aims of these institutes is to build a collective (TU/e) strength on the selected cross-departmental and interdisciplinary themes, to address key scientific and societal challenges, and to develop 'thought leadership'.
- Infrastructure is also of utmost importance for the university. It will make TU/e attractive to researchers, students, companies, and talent. TU/e is developing a roadmap for infrastructures.

The department of Mechanical Engineering plays a pivotal role in the above mentioned initiatives.

The Executive Board will discuss the recommendations with the Department Board in the bi-annual meetings with the Department of Mechanical Engineering.

The Executive Board of TU/e has accepted the report and its recommendations and wishes to thank the assessment committee for the considerable time and effort it has spent on this assessment.

On behalf of the Executive Board,



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