Engineering Mechanics
Annual Report 2025

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Notice
This Annual Report is available at the EM website.

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Preface

Engineering research is currently passing through a period of profound transition, shaped by several converging forces: funding agencies' growing emphasis on demonstrable societal impact, pressuring researchers to shift from fundamental towards more applied research; increasing public and political scepticism about the role and value of science and, more generally, of the pursuit of knowledge; and the rapid advance of artificial intelligence, which opens up unprecedented opportunities for academic research on the one hand, but raises profound, perhaps even existential, questions about the human contribution to research and education on the other hand. At such times, belonging to a scientific community matters more than ever. It provides a place to test ideas, recalibrate one's assumptions and opinions, and confront uncertainty together. The national research school for Engineering Mechanics aims to provide such a community for the Dutch mechanics community.

EM continued to grow in 2025. Registered membership rose by approximately 6%, from 447 in 2024 to 473 in 2025, continuing the multi-year upward trend. The 2025 membership included 291 PhD researchers, 33 postdoctoral researchers, and 149 staff members. This growth reflects the vitality of the engineering mechanics research field and brings new expertise and perspectives. It also creates opportunities for researchers at different career stages and across different areas of mechanics to meet and learn from one another.

EM's course programme is central to its research-training mission. In 2025, the biennial set of courses attracted 203 participants and awarded 314 credits. Compared with the same course set in 2023, participation rose from 146 to 203, while credits awarded increased from 257 to 314. Particularly encouraging is that participation did not only increase in absolute numbers, but it also increased relative to membership: the number of course participants per 100 registered members rose from about 35 in 2023 to 43 in 2025. Moreover, overall course evaluations have remained positive with an average score of 4.3 out of 5 for the courses in 2025. The programme has also been extended with two timely subjects, *Composites*, scheduled for 2026, and *Metamaterials*, scheduled for 2027. These additions broaden the curriculum in areas of growing relevance to engineering mechanics.

The annual symposium is the central meeting point for the EM community. Its 28th edition brought researchers together over two days of talks, workshops, and poster presentations, alongside opportunities for informal exchange. The workshops covered themes including composites, processing and manufacturing, multiscale mechanics, and robotics and mechatronic systems.

The 28th symposium was once again a success, bringing the community together in its characteristically warm and interactive atmosphere. At the same time, attendance fell from 208 in 2024 to 181 in 2025, a decrease of about 13%. This decline is particularly concerning given EM's continued membership growth: the attendance-to-membership ratio fell from about 47 to 38 attendees per 100 registered members between 2024 and 2025. Tighter financial circumstances faced by many EM groups in 2025 and the resulting need to limit expenditure may partly explain this decline. Regardless of its causes, maintaining broad participation in the symposium is essential to sustaining the collaborations and sense of community on which EM depends. EM's Management Team and Governing Board will continue to monitor attendance closely at future editions.

As scientific director, I am sincerely grateful to everyone who contributes to EM's courses, symposium, and collaborative activities. These shared opportunities for learning and exchange

are vital to the School's continued growth and service to the Dutch engineering mechanics community.

Prof. Harald van Brummelen
Scientific Director Engineering Mechanics

Summary of 2025

- Registered EM membership reached 473, up from 447 in 2024 and 412 in 2023.
- The 2025 biennial course set attracted 203 participants and awarded 314 ECTS credits, compared with 146 participants and 257 ECTS credits for the same course set in 2023.
- Course evaluations continue to be very positive, with an average score of 4.3 out of 5.
- Two new courses were approved for the programme: *Composites*, scheduled for 2026, and *Metamaterials*, scheduled for 2027.
- Symposium attendance was 181, down from 208 in 2024, underscoring the importance of maintaining broad participation in this key community event.

Chapter 1

General information

1. Introduction

The Netherlands have a unique ecosystem of universities, characterized by a strong academic reputation and multilateral collaborations within many scientific disciplines. While individual universities do not generally have critical mass within a specific discipline to render the organization of specialized, advanced graduate courses feasible, in The Netherlands consortia of universities do reach this viable scale. Within this context, in the 1990s several inter-university graduate schools were founded for a variety of scientific disciplines. The status of these inter-university graduate schools is arranged in a formal agreement between the executive boards of the participating universities. One of the universities acts as commissioner for the graduate school, and is responsible for the daily management and administration of the graduate school, including the organization and running of the educational program and the various scientific activities. Until 2014, a formal accreditation system was in place for graduate schools. This accreditation system was administered by the Royal Netherlands Academy of Arts and Sciences (KNAW). With the emergence of local graduate schools, associated with individual universities instead of inter-university consortia, the Royal Academy decided to discontinue the formal accreditation system for graduate schools. Motivated by the significant added value provided to their communities, however, most inter-university graduate schools proceeded without accreditation.

The graduate school on Engineering Mechanics was founded in 1996 and received its first five-year accreditation by KNAW in 1997. Following the Dutch tradition in mechanics after Biezeno and Koiter, the research school on Engineering Mechanics has adopted a broad and inclusive perspective on mechanics, stimulating cross fertilization between the many subdisciplines of mechanics, such as solid mechanics, dynamics, materials science, damage and fracture, and beyond. EM embraces all research groups that are active in these subdisciplines of mechanics at Eindhoven University of Technology, Delft University of Technology, University of Twente, and University of Groningen. Since the establishment of EM, Eindhoven University of Technology has acted as commissioner and has hosted the secretariat. The department of Mechanical Engineering of Eindhoven University of Technology acts as executive commissioner for EM. As a de facto part of the department of Mechanical Engineering of TU/e, Engineering Mechanics is evaluated in conjunction with the department.

Although EM operates primarily at a national level, it also serves as a point of contact for international affiliated organizations. Under the umbrella of the Netherlands Mechanics Committee, EM and its companion organization for fluid mechanics, the JM Burgers Center, jointly represent the Dutch mechanics community.

2. Mission

In accordance with the joint agreement between the participating universities, the interuniversity research school for Engineering Mechanics has a threefold mission:

- Sustaining a strong network for research and education in engineering mechanics;
- Fostering national and international collaboration, both among research groups and with industrial partners;
- Providing joint courses and complementary training activities for PhD candidates from participating and affiliated research groups.

In support of its mission, Engineering Mechanics carries the following engagements:

- Administering an educational program of high-quality advanced courses on subjects relevant to the field of engineering mechanics, to train PhD-students of the participating groups to become qualified independent researchers in the field in accordance with prevailing international standards, and quality control of the educational program.
- Serving a networking function and providing its members with information through the website, annual reports, etc.;
- Representing the field in national and international networks and governing bodies;
- Strengthening the position of scientific research at both the national and international level, while also promoting the career prospects of PhD graduates and researchers in the academic and non-academic labor market, both in the Netherlands and abroad;
- Facilitating, where possible, long-term collaborations with research institutes operating under NWO, TNO, NLR, MARIN and Deltares, and with research organizations in industry;
- Acting as a knowledge center in the field of engineering mechanics.
- Maintaining an administration of individual members of the inter-university research school for Engineering Mechanics and promoting membership for new researchers and new research groups in the field of engineering mechanics associated with its partner universities;
- Promoting synergetic alignment of research directions and activities of the participating groups pertaining to engineering mechanics;
- Stimulating multilateral national thematic and strategic discussions pertaining to the field of engineering mechanics, including the organization of workshops for representatives from industry, technological institutes and affiliated researchers to identify and discuss the needs of industrial partners with respect to scientific research;
- Exchanging information on and safeguarding of the standards of undergraduate education in the domain of engineering mechanics at the Dutch universities;

3. Governance & Organization

The organizational structure of the inter-university research school for Engineering Mechanics is summarized in Figure 1.1.

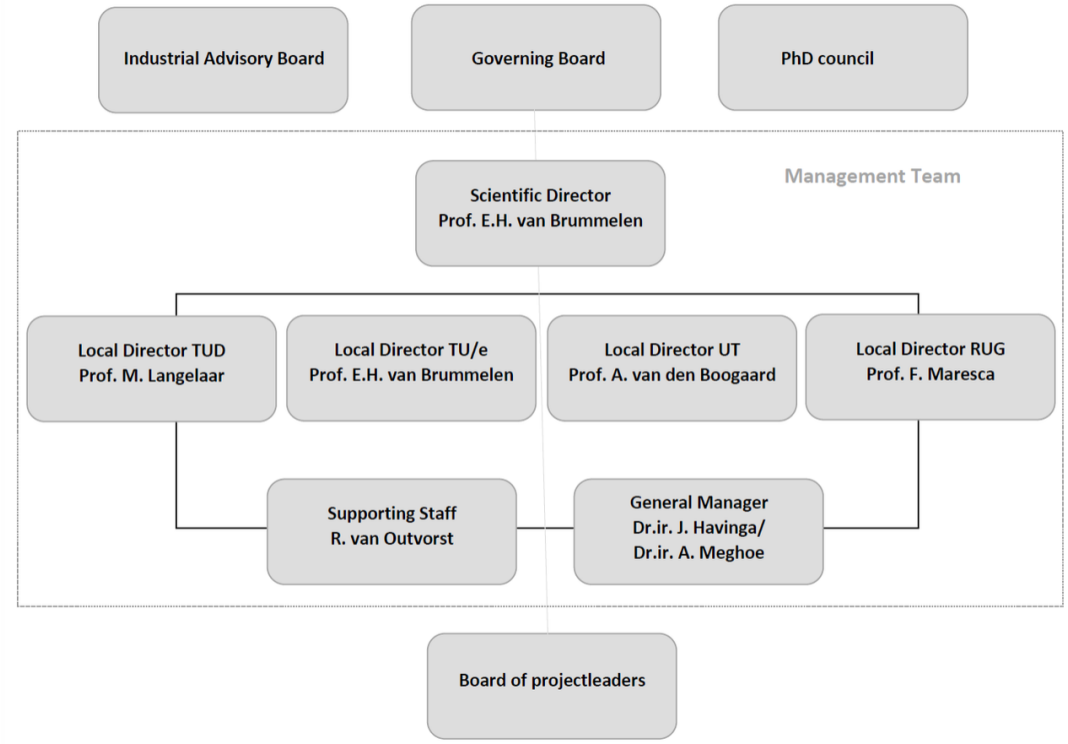

Figure 1.1: Organization chart of Engineering Mechanics (reference date 31st of December 2025).

The Governing Board (Table 1.2) is in charge of setting the strategic objectives of the research school pertaining to education, research and operation, including finances. As part of its engagements, the Governing Board establishes the educational program of the research school. The members of the Governing Board are appointed by the dean of the executive commissioning department, upon nomination by the Governing Board. The composition of the board, as well as its formal responsibilities and authority, are specified in the joint agreement between the participating universities. The Scientific Director is appointed by the commissioner of EM, and is in charge of the day-to-day management of the research school. Each participating university is represented in the board by a local director, who acts as a representative of their institute, and who assist the Scientific Director. In its capacity as executive commissioner of the Engineering Mechanics research school, the department of Mechanical Engineering of Eindhoven University of Technology provides support for the research school, and administers the secretariat. The directors, general manager and secretary together form the management team of the research school.

Governing Board
Prof.dr.ir. A.H. van den Boogaard (Chairman) University of Twente
Prof.dr.ir. M. Langelaar Delft University of Technology
Dr.ir. S. Turteltaub Delft University of Technology
Prof.dr.ir. A.S.J. Suiker Eindhoven University of Technology
Prof.dr. E.H. van Brummelen University of Eindhoven
Prof.dr. V. Magnanimo University of Twente
Prof.dr. ir. F. Maresca University of Groningen

Table 1.2: Governing Board of EM (reference date 31st of December 2025).

The Governing Board of Engineering Mechanics and its Scientific Director receive solicited and unsolicited counsel from two advisory boards, viz. the PhD council composed of representatives of the PhD students in the research school and an Industrial Advisory Board composed of representatives from industry and applied research institutes; see Tables 1.4 and 1.6, respectively.

PhD Council
Ir. L.D. (Lloyd) Dodsworth Eindhoven University of Technology Department of Mechanical Engineering
Ir. V.M. (Vincent) Blümer University of Twente Faculty of Engineering Technology
Ir. K. (Kismat) Pandey University of Groningen Faculty of Science and Engineering
Ir. S. (Siddharth) Pantoji Delft University of Technology Faculty of Mechanical, Maritime and Materials Engineering

Table 1.4: Composition of the PhD council (reference date 31st of December 2025).

The Board of Project Leaders is composed of the permanent-staff members of the affiliated groups, registered as member of EM. This board represents the general assembly of the research school. The general assembly convenes at least once annually in a meeting chaired by the Scientific Director, to discuss the operational progress of the research school.

Industrial Advisory Board
Dr. ir. F.J. Blom NRG, Petten
Ir. H.J. ten Hoeve NLR, Marknesse
Dr.ir. E. Atzema Tata Steel Research, IJmuiden
Dr. M. Geessinck – Kamphuis Demcon, Enschede
Dr.ir. S. Gielen ASML, Veldhoven
Dr.ir. R. Willekers TNO, Delft
Dr.ir. O.W. Salomons Canon, Venlo

Table 1.6: Industrial Advisory Board of EM (reference date 31st of December 2025).

4. Participants

The Graduate School on Engineering Mechanics was founded as an inter-university Graduate School by the Eindhoven and Delft University of Technology and the University of Twente. The Eindhoven University of Technology acts as the commissioner, hosting the secretariat. Co-operation takes place through local institutes and consortia.
On the 31st of December 2025, the following groups participate in Engineering Mechanics:

	Department	Group / Staff representative(s)
TUD	Aerospace Engineering	Aerospace Structures and Computational Mechanics dr. S. Turteltaub
		Wind Energy dr.ir. F. De Prenter
	Mechanical Engineering	Computational Design and Mechanics Prof.dr.ir. M. Langelaar
		Dynamics of Micro and Nanosystems Prof.dr. P. Steeneken
		Biomaterials and Tissue Biomechanics Prof.dr. A. Zadpoor
		Ship and Offshore Structures dr. C.L. Walters
		Mechatronic System Design Prof.dr.ir. J.L Herder
	Civil Engineering and Geosciences	Computational Mechanics, Structural Mechanics and Dynamics Prof.dr.ir. L.J. Sluys
	Electrical Engineering, Mathematics and Computer Science	Numerical Analysis Prof.dr.ir. C. Vuik

	Department	Group / Staff representative(s)
TU/e	Mechanical Engineering	Dynamics and Control Prof.dr.ir. N. van der Wouw
		Energy Technology and Fluid Dynamics Prof.dr.ir. E.H. van Brummelen
		Mechanics of Materials Prof.dr.ir. M.G.D. Geers
		Microsystems Prof.dr.ir. J.M.J. den Toonder
		Robotics t.b.d.
	Built Environment	Applied Mechanics and Design Prof.dr.ir. A.S.J. Suiker

	Department	Group / Staff representative(s)
UT	Engineering Technology	Nonlinear Solid Mechanics Prof.dr.ir. A.H. van den Boogaard
		Applied Mechanics and Data Analysis Prof.dr.-ing. B. Rosic
		Dynamics Based Maintenance Prof.dr.ir. T. Tinga
		Production Technology Prof.dr.ir. R. Akkerman
		Multi Scale Mechanics Prof.dr.rer.-nat. S. Luding
		Soil Micromechanics Prof.dr. V. Magnanimo
		Computational Design of Structural Materials Prof.dr.ir. I.M. Gitman
		Surface Technology and Tribology Prof.dr.ir. M.B. de Rooij

	Department	Group / Staff representative(s)
RUG	Science Engineering	Micromechanics Prof.dr.ir. E. van der Giessen
		Computational Mechanics and Materials Engineering Prof.dr. A.I. Vakis
		Cardiovascular Mathematics Prof. C. Bertoglio
		Dynamics and Vibration Prof. M. GhandchiTehrani
		Mechanics of Materials Prof. F. Maresca

For 2025, the total number of EM members amounts to:

	Sources of financing[1]			Total	
	1	2	3	number	FTE (research)
Senior academic staff[2]	149	0	0	149	53.6
PhD[3]	110	74	107	291	232.8
Postdocs[4]	6	7	20	33	26.4
Total	265	81	127	473	312.8

[1](1): University; (2): NWO etc.; (3): Industry, TNO, EC-funds, etc.

[2]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

[3]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

[4]Research input for PD per year: 0.8 FTE. The PD research input is only to be included until 2 years after the appointment of the PD researcher.

5. Current research topics

An overview of topics within the scope of Engineering Mechanics groups is generated by creating a SciVal word-cloud of the keyphrases from the publications of the different groups in recent years[1]. The word-cloud for the complete set of publications from 2023 to 2025 from Engineering Mechanics groups is shown below:

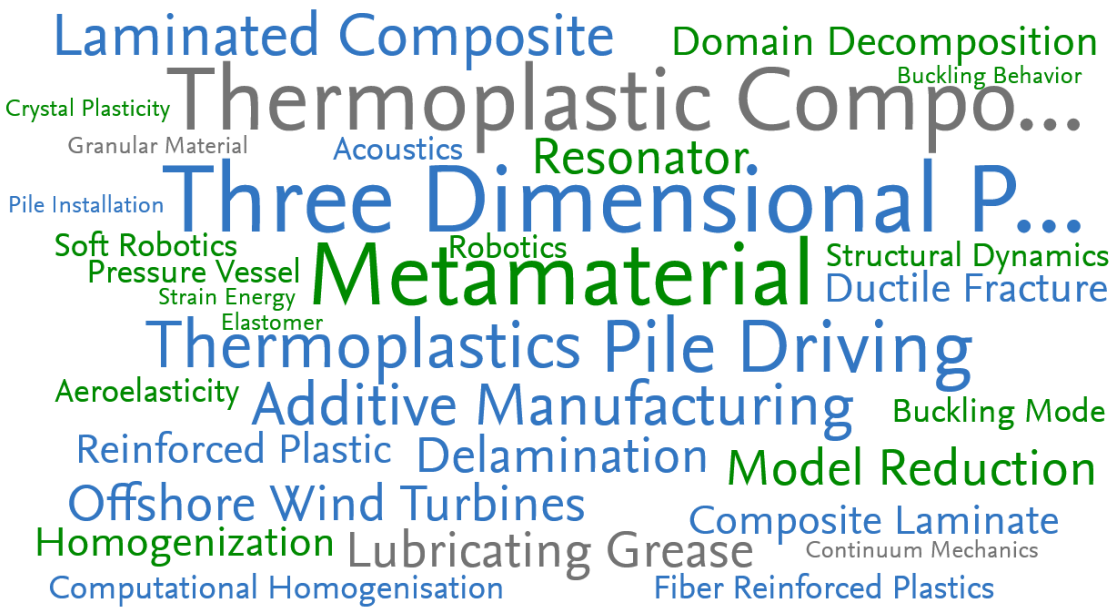

Figure 1.2: Word-cloud generated using all EM publications in 2023 to 2025. Colors indicate declining and growing frequency of words within this time period. Incomplete words are 'Thermoplastic Composite' and 'Three Dimensional Printing'.

[1] https://www.scival.com

For each of the institutions, another word-cloud was generated using the publications from Engineering Mechanics groups from that institution in 2023 to 2025:

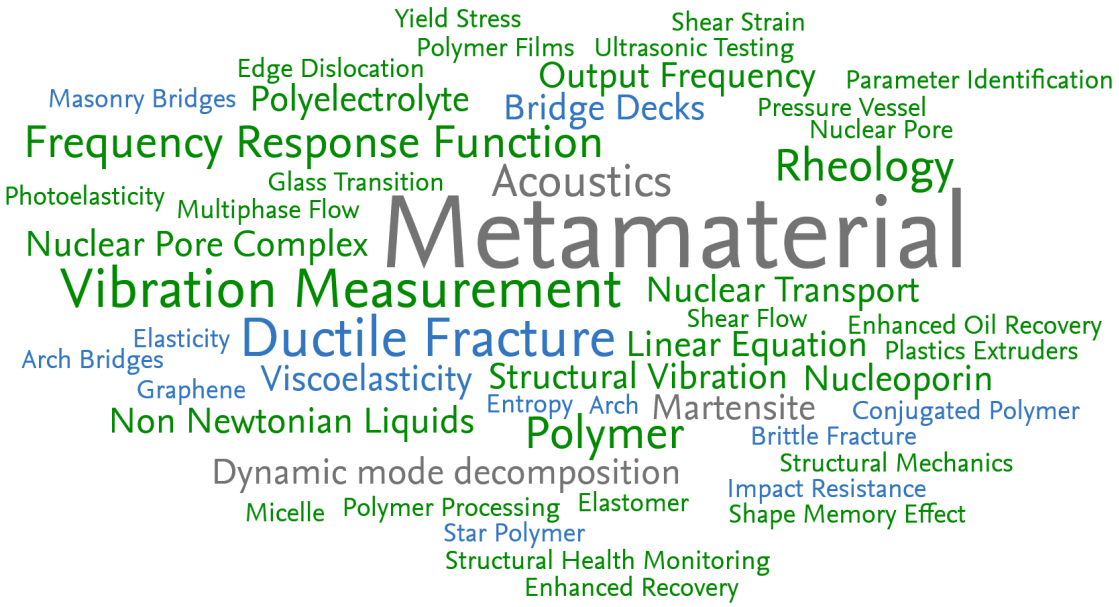

Figure 1.3: Word-cloud generated using publications from RUG in 2023 to 2025. Colors indicate declining and growing frequency of words within this time period.

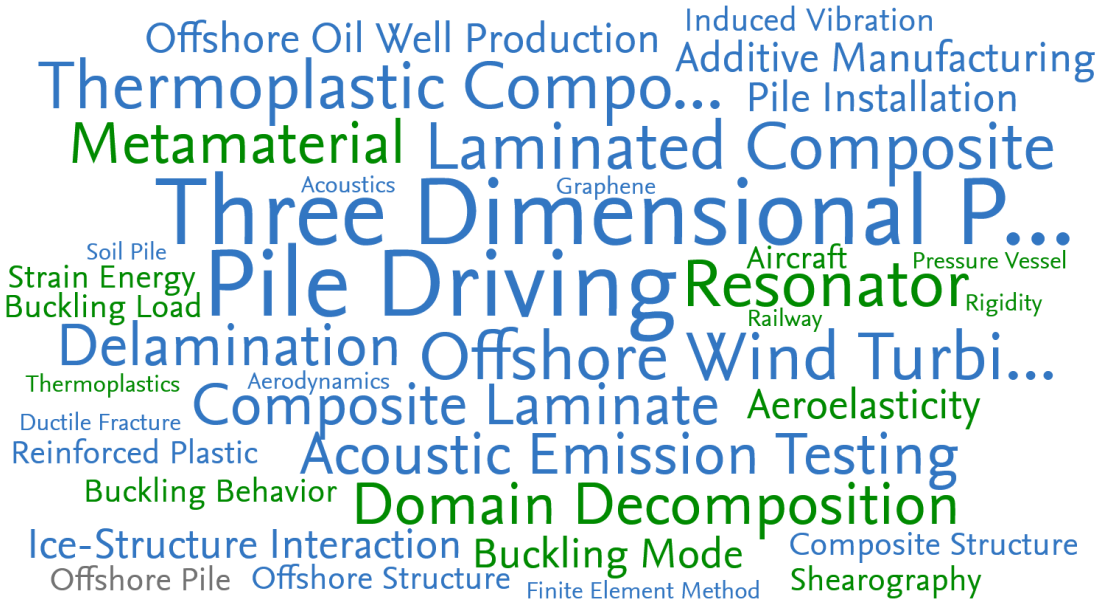

Figure 1.4: Word-cloud generated using publications from TUD in 2023 to 2025. Colors indicate declining and growing frequency of words within this time period. Incomplete words are 'Thermoplastic Composite', 'Three Dimensional Printing' and 'Offshore Wind Turbines'.

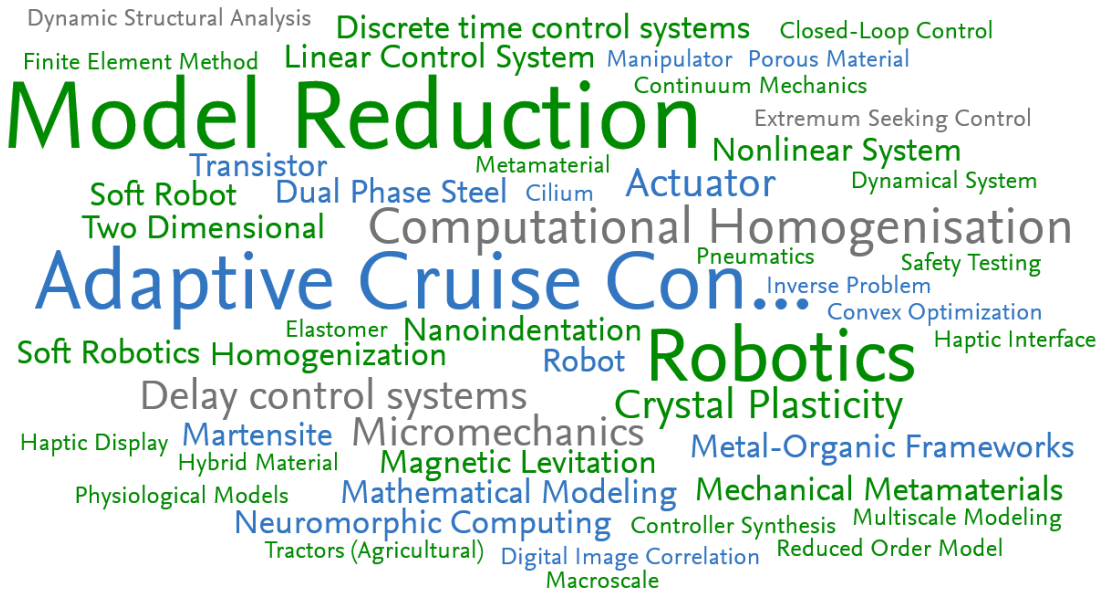

Figure 1.5: Word-cloud generated using publications from TU/e in 2023 to 2025. Colors indicate declining and growing frequency of words within this time period. Incomplete word is 'Adaptive Cruise Control'.

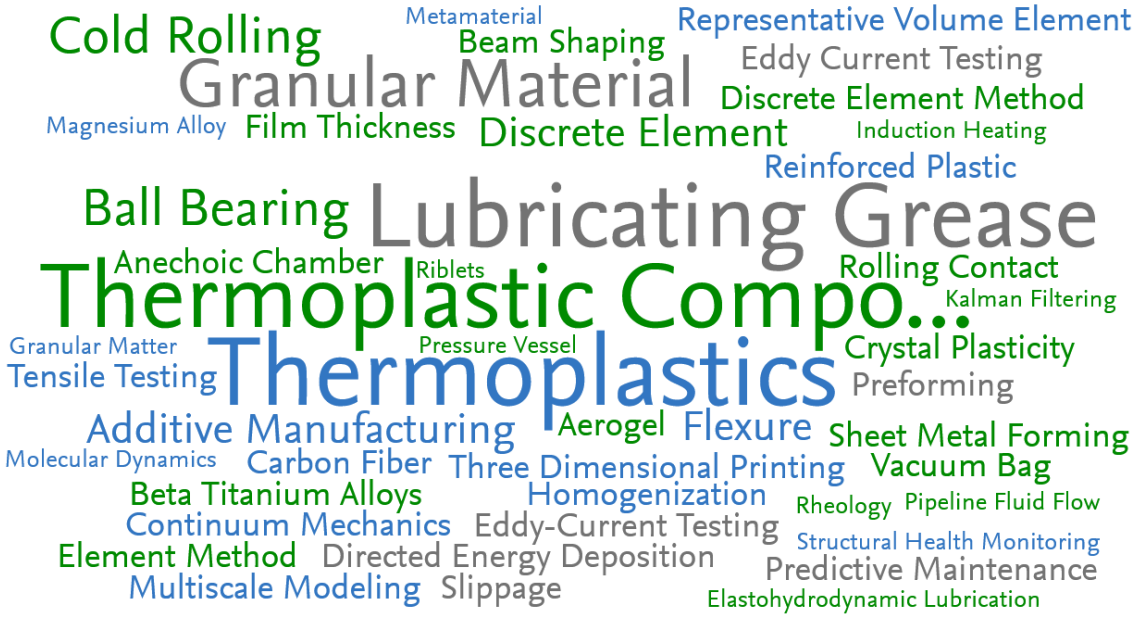

Figure 1.6: Word-cloud generated using publications from UT in 2023 to 2025. Colors indicate declining and growing frequency of words within this time period. Incomplete word is 'Thermoplastic Composite'.

6. Education

In 2008, a new course programme has been established in the interest of the PhD students and Post-Docs. Key characteristics are: a two-years cycle course programme, formal registration of credit points, more courses and courses of different type (broad or in depth).
The minimum educational load for PhD students is 15 credit points. After completing the programme, a PhD student receives a formal certificate, as proof of his/her successful participation in the EM course programme.
The courses given in 2025 and planned in the following years are listed in this chapter.

1. Engineering Mechanics PhD courses given in 2025

The following EM courses have been lectured as a part of the educational programme:

Title	**Structural Health Monitoring: Dynamics & Data Analysis**
Date & location	17 - 18 February 2025, University of Twente
Lecturers	R. Loendersloot (UT), E. Lourens (TUD), P. Pahlavan (TUD)
Credit points	1
First edition	2023
Participants	26

Title	**Practical Introduction to Parallel Programming**
Date & location	3-7 March 2025, Delft University of Technology
Lecturers	M. Möller (TUD), E.J. Lingen (Dynaflow)
Credit points	2
First edition	2021
Participants	25

Title	**Continuum Thermodynamics**
Date & location	7-8 April 2025, Delft University of Technology
Lecturers	S. Turteltaub (TUD), A. Suiker (TU/e), V. Kouznetsova (TU/e)
Credit points	1
First edition	2013 or before
Participants	33

Title	**Structural Optimization: Algorithms and Applications**
Date & location	8-9 May 2025, Delft University of Technology
Lecturers	M. Langelaar (TUD), O. Rokos (TU/e), J. Havinga (UT)
Credit points	1
First edition	2013 or before
Participants	45

Title	**Stability of Structures**
Date & location	2-4 & 7-9 July 2025, Delft University of Technology
Lecturers	F. van der Meer (TUD), F. van Keulen (TUD), H. Goosen (TUD), S. Giovani Pereira Castro (TUD)
Credit points	3
Participants	16

Title	Nonlinear Material Mechanics
Date & location	22-24 & 29 September - 1 October 2025, University of Twente
Lecturers	C. Soyarslan (UT), R. Akkerman (UT), T. van den Boogaard (UT), S. Luding (UT), V. Magnanimo (UT), I. Ostanin (UT), S. Perdahcioğlu (UT), B. Sluys (TUD), T. Weinhart (UT)
Credit points	3
First edition	2013 or before
Participants	27

Title	Solution Methods in Computational Mechanics
Date & location	11-12 November 2025, Eindhoven University of Technology
Lecturers	J. ten Thije Boonkkamp (TU/e), M. Anthonissen (TU/e)
Credit points	1
First edition	2015
Participants	31

2. Engineering Mechanics PhD course programme for the years 2026-2027

The provisional planning of the EM courses for the upcoming two years is given below. The course duration varies from 2 to 6 days, with 0.5 EC being awarded for each course day:

Title	Main organizer	Scheduling	EC
Scientific Computing with Open-source Software	T. Weinhart	January 2026	3
Composite materials	D. Peeters	February 2026	1.5
Machine Learning	H. Cheng	March 2026	1
Mechanics in Microsystems	H. Goosen	April 2026	1
Interfaces & Coupled Problems	H. van Brummelen	May 2026	1.5
Advanced Dynamics	F. Alijani	June 2026	1
Experimental Engineering Mechanics	J. Hoefnagels	September 2026	1
EM Symposium	MT	October 2026	–
Multi-scale and Micromechanics	H. van Dommelen	November 2026	3
Mechanics of Large Deformations	J. Hazrati	December 2026	1
Applied Metamaterials	M. Mirzaali	January 2027	1.5
Structural Health Monitoring: Dynamics & Data Analysis	R. Loendersloot	February 2027	1
Practical Introduction to Parallel Programming	M. Möller	March 2027	2
Continuum Thermodynamics	S. Turteltaub	April 2027	1.5
Structural Optimization: Algorithms and Applications	M. Langelaar	May 2027	1
Stability of Structures	F. van der Meer	June 2027	3
Nonlinear Material Mechanics	C. Soyarslan	September 2027	3
EM Symposium	MT	October 2027	–
Solution Methods in Computational Mechanics	J. ten Thije Boonkkamp	November 2027	1

7. General description of developments in 2025

2025 was another successful year for the graduate school EM. Like in the previous years, priority was laid on the continuation of the research activities in the field of Engineering Mechanics. This resulted in the following overall output for 2025:

Scientific publications: refereed journals	429
Scientific publications: books, chapters in book	28
Scientific publications: refereed proceedings	109
PhD theses	35

This output is documented in more detail in subsequent chapters of this Annual Report
To stimulate the exchange of information on ongoing research within the Graduate School, the Engineering Mechanics Symposium took place on October 30-31, 2025 at Hotel Papendal, Arnhem. 181 of the senior academic staff and PhD-students participating within the Graduate School attended the Engineering Mechanics Symposium.
Prof. Francisco Chinesta presented a keynote lecture, entitled "Hybrid AI to enhance science, engineering and technology". The topics of the Workshops at the 2025 EM Symposium were "Composites", "Processing and Manufacturing", "Multi-scale Mechanics" and "Robotics and Mechatronic systems".
Each of the workshops started with a Plenary Introduction by the Workshop Organizers on the trends and challenges of the topics of the workshops. Next, two of the actual Workshops were scheduled to run in parallel on the first Symposium day, whereas the other two were scheduled to run in parallel on the third Symposium day. Each Workshop consisted of two parts, separated by a break. Each part consisted of two presentations by PhD-students/Postdocs.
In conjunction with the oral presentations there was a PhD-students presentation contest, awarding a prize for the best PhD presentation at each of the Symposium Workshops. Members of the jury were the Workshop Organizers.
In two poster sessions 96 PhD-students and Postdocs of the EM Graduate School presented their current research project. This resulted in stimulating discussions on running projects. In conjunction to the poster sessions a poster contest was organized in which a jury selected the best three contributions.
During the symposium Bas Kessels received the 2025 Biezeno award for the PhD thesis about "AI-based model updating for nonlinear dynamical systems".

Additional remarks:

- There was a meeting of the Advisory Board of the Graduate School on Engineering Mechanics, which took place after the 28th Engineering Mechanics Symposium. At this meeting the future strategy and directions of the EM Graduate School were discussed.
- There was a meeting of the board of project leaders during th EM symposium, in which the EM activities were evaluated and the Engineering Mechanics Symposium was discussed. Plans for the next Engineering Mechanics Symposium, to be held October 22-23, 2026 in Hotel Papendal, Arnhem, were also discussed with all faculty members present. The planned workshop topics for 2026 are: "Hydrogen effects on mechanical behaviour", "Failure mechanics", "Optimization", "Data-driven mechanics".

8. Aggregated input and output for 2025

1. Input related to EM, 2025

A subdivision of the input in fte over the participating Universities gives the following results:

	TU/e (fte)	TUD (fte)	UT (fte)	RUG (fte)	Total (fte)
Senior academic staff[1]	12.7	25.0	12.7	3.2	53.6
PhD[2]	47.2	115.2	49.6	20.8	232.8
Postdocs[3]	4.0	15.2	2.4	4.8	26.4
Total	63.9	155.4	64.7	28.8	312.8

2. Output related to EM, 2025

The total number of publications by the members of Engineering Mechanics is listed below. Publications with co-authors from multiple universities are counted for each of the universities. These publications are counted once in the total Engineering Mechanics publications.
A subdivision of the output over the participating Universities gives the following results:

	TU/e	TUD	UT	RUG	Total
Scientific publications: refereed journals	116	207	71	41	429
Scientific publications: books, chapters in book	5	17	1	5	28
Scientific publications: refereed proceedings	38	48	18	5	109
PhD theses	11	14	6	4	35

9. Overview of output per participating group, 2025

In this section the 2025-output per participating group is summarized. Further details can be found in the description of individual groups in subsequent chapters. Aggregated results are reported in the preceding paragraph.
Publications with co-authors from multiple groups are counted for each of the groups. These publications are counted once in the totals of the universities and of total Engineering Mechanics publications in Section 1.8.2.

[1]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

[2]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

[3]Research input for PD per year: 0.8 FTE. The PD research input is only to be included until 2 years after the appointment of the PD researcher.

	Group	Ref. journals	Books, chapters in book	Ref. proceedings	PhD-theses
TU/e	Energy Technology and Fluid Dynamics	14	0	0	2
	Mechanics of Materials	35	0	3	6
	Dynamics and Control	40	4	26	3
	Applied Mechanics	6	1	2	0
	Microsystems	19	0	3	0
	Robotics	7	0	8	0
TUD	Dynamics of Micro and Nanosystems (PME)	17	0	3	4
	Computational Design and Mechanics	18	1	2	3
	Aerospace Structures and Computational Mechanics	65	2	18	2
	Ship and Offshore Structures	19	1	6	1
	Computational Mechanics Structural Mechanics and Dynamics	32	12	15	2
	Biomaterials and Tissue Biomechanics	26	1	2	1
	Mechatronics System Design	12	0	1	1
	Numerical Analysis	20	0	4	0
	Wind Energy	3	0	1	0
UT	Nonlinear Solid Mechanics	4	0	5	1
	Applied Mechanics and Data Analysis	10	0	0	0
	Dynamics Based Maintenance	5	0	0	1
	Production Technology	22	0	3	2
	Multi-scale Mechanics	7	0	8	0
	Soil MicroMechanics	2	0	5	0
	Computational Design of Structural Materials	5	0	0	0
	Surface Technology and Tribology	19	1	1	2
RUG	MicroMechanics	14	0	0	0
	Computational Mechanical and Materials Engineering	21	3	5	2
	Cardiovascular Mathematics	2	2	0	1
	Dynamics and Vibration	0	0	0	0
	Mechanics of Materials	6	0	0	1

10. National and international affiliations

The research school for Engineering Mechanics, together with its companion organization for fluid mechanics, JMBC, is affiliated with various international organizations in mechanics, within the framework of the Netherlands Mechanics Committee. NMC is affiliated with:

- CISM (Centro internazionale di scienze meccaniche);
- ECCOMAS (European Community on Computational Methods in Applied Sciences);
- EUROMECH (European Mechanics Society);
- IACM (International Association for Computational Mechanics);
- IUTAM (International Union of Theoretical and Applied Mechanics).

Chapter 2

Research documentation per participating department

The following data sources have been consulted:

- EM membership administration
- Scopus (collective indexed output of all EM group members in 2025)

The following rules have been followed to list the research input and output per participating department:

Group members

- PhD students are included until 4 years after the appointment of the PhD candidate.
- If the dissertation defence date is within the period for which the PhD student is included in the annual report, the PhD student will appear in both sections 'Running PhD-projects' and 'Dissertations'.
- Postdoctoral researchers are included until 2 years after the appointment of the PD researcher.

Research input

- The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.
- The research input for PhD students and postdoctoral researchers is counted as 0.8 FTE.

Publicatons

- The publications of all EM staff members in 2025 were gathered using Scopus. Publications of PhD students and Postdoctoral researchers were not gathered separately, but are assumed to have been co-authored by a staff member.
- Publications with co-authors from multiple groups are counted for each of these groups.

1. University of Groningen – Science and Engineering

1. Senior academic staff

MicroMechanics		
prof.dr.ir. E. van der Giessen	Full professor	0.40
dr. A. Giuntoli	Assistant professor	0.40
Computational Mechanical and Materials Engineering		
prof.dr. A. Vakis	Associate professor	0.40
P.D. Druetta	Assistant professor	0.40
dr. A. Krushynska	Assistant professor	0.40
dr. L. Cheng	Assistant professor	0.40
Cardiovascular Mathematics		
prof. C.A. Bertoglio	Associate professor	0.40
Mechanics of Materials		
prof.dr. F. Maresca	Associate professor	0.40
	Total FTE[1]:	3.20

2. Running PhD-projects in 2025 related to research school EM

MicroMechanics			
R.P. Pramanik	(PhD 1)	Computational design of soft robots	2024-04-18 – present
Computational Mechanical and Materials Engineering			
A.T. Asiikkis	(PhD 1)	Fluid flows through dense wave energy converter arrays	2021-09-01 – present
B.J.T. Piest	(PhD 2)	MetaFlow: Phononic subsurfaces for controlling flow and reducing flow-induced vibrations	2024-10-01 – present
D.A. Guzman	(PhD 2)	Metamaterial grippers integrated with flexible electronic sensors for grasping modulation	2023-07-01 – present
H.C.V. Veluvali	(PhD 1)	Developing and modeling metamaterial-based personalized medical devices	2023-11-01 – present
S. Beniwal	(PhD 2)	Additively manufactured polymer metamaterials with prescribed dynamic characteristics	2023-07-01 – present
V. Hostinský	(PhD 1)	Metamaterials in aeroelastic optimization	2025-10-23 – present
J.Y. Jing	(PhD 1)	Numerical simulation and experimental tests of nano-technologically boosted CO2 EOR	2023-10-01 – present
Y.Q. Qi	(PhD 1)	Bearing capacity and surrounding scour characteristicsof thesuction anchor foundation of the Ocean Battery	2022-11-01 – present
Cardiovascular Mathematics			

[1]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

A.I. Utrera	(PhD 2)	Integrative modeling of the cardiovascular health: from microstructural characterization to systemic function	2025-06-01 – present
G.K. Urrutia Aguilera	(PhD 1)	Personalized cardiac modelling from real time MRI in rest and exercise	2023-12-01 – present
S.J.B. Schomaker	(PhD 1)	Modelling of the cardiovascular system	2022-09-01 – present
Dynamics and Vibration			
H.L. Liu	(PhD 1)	An enhanced defects detection and localization technique based on Ultrasonic Guided Waves in Composite/Metal components	2023-11-01 – present
X.K. Xie	(PhD 1)	Bridge-structure condition monitoring based on data-driven modelling using camera data	2023-11-01 – present
L.M. Esquivel-Sancho	(PhD 3)	Physics-informed machine learning model based on vibration analysis for predictive maintenance.	2024-08-01 – present
M.F. Farzannasab	(PhD 1)	Active vibration control	2023-05-17 – present
N. Ghanbari Kohyani	(PhD 3)	Dynamic analysis and human vibration perception of hand held	2025-01-01 – present
S. Taghizadeh	(PhD 1)	Health monitoring of composite laminates	2024-10-01 – present
S.W. Sijie	(PhD 1)	Inverse Bio-Inspired Fish Scale Design	2025-01-01 – present
W.Z. Zhang	(PhD 1)	Interpretable nonlinear modal analysis using data-driven modelling for MIMO systems	2024-09-01 – present
X.Y. WANG	(PhD 1)	Infrared nondestructive testing	2025-01-01 – present
X. Han	(PhD 1)	Sensor fusion and machine learning in Predictive Maintenance for railway track at transition zones towards digital transformation inindustry 4.0	2023-11-01 – present
S.Y.X. Si	(PhD 1)	Towards building seismic resilience: Building isolation and risk assessment under earthquakes	2023-11-01 – present
Mechanics of Materials			
F.G. Brunner	(PhD 2)	Predictive modelling of atomistic fracture in Fe-based alloys	2022-06-01 – present
K. Pandey	(PhD 3)	Multi-scale modeling of adhesive wear in zinc-coated steels	2023-11-01 – present
J. Jiahang	(PhD 2)	Modeling and prediction of hydrogen-induced fatigue-crack growth in steels	2025-07-01 – present

3. Postdocs

Computational Mechanical and Materials Engineering

I.S. Spanos	(PD 3)	Integrating mechanical metamaterials and flexible electronic sensors into functional grippers, targeted towards applications in the agricultural sector
S. Dindarlou	(PD 3)	A Micro-mechanical Roughness Transfer Model in Rolling Mastering Strip Surface Roughness During Cold And Skin-pass Rolling

Cardiovascular Mathematics

D.J. Nolte	(PD 3)	Medical image based inverse problems in multiphysics multiscale cardiovascular simulations

Dynamics and Vibration

M. Askari	(PD 1)	Vibration Energy Harvesting via Smart Structures

Mechanics of Materials

D. Fioravanti	(PD 3)	Initiation of Fracture in Zinc-based metallic coatings(IniFrac)
L.L.R. La Rosa	(PD 1)	Multiscale modeling of martensitic transformations in shape memory alloys

4. Dissertations

Computational Mechanical and Materials Engineering

T.M. Kousemaker, *Numerical modelling of multiphase flow and transport phenomena in screw extruders*, 2025-06-02. Supervisors: Picchioni, Francesco, Supervisor Vakis, Antonis, Supervisor Druetta, Pablo, Co-supervisor.

Z. Zhang, *Programmable Design of Mechanical Metamaterials*, 2025-09-29. Supervisors: Vakis, Antonis, Supervisor Picchioni, Francesco, Supervisor.

Cardiovascular Mathematics

R.A. Arostica Barrera, *Forward and inverse problems in cardiac mechanics*, 2025-01-14. Supervisors: Bertoglio, Cristobal, Supervisor Verstappen, Roel, Supervisor.

Mechanics of Materials

L.L.R. La Rosa, *Unravelling atomistic mechanisms of martensitic transformations in shape-memory alloys*, 2025-04-08. Supervisors: Maresca, Francesco, Supervisor Vakis, Antonis, Supervisor.

5. Overview of research input and output Science and Engineering related to EM, 2025

Input

	Sources of financing[2]			Total	
	1	2	3	#	FTE
Senior academic staff[3]	8	0	0	8	3.2
PhD[4]	17	6	3	26	20.8
Postdoc[5]	2	0	4	6	4.8
Total	27	6	7	40	28.8

[2](1): University; (2): NWO etc.; (3): Industry, TNO, EC-funds, etc.

[3]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

[4]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

[5]Research input for PD per year: 0.8 FTE. The PD research input is only to be included until 2 years after the appointment of the PD researcher.

Output

	Total
Scientific publications: refereed journals	41
Scientific publications: books, chapters in book	5
Scientific publications: refereed proceedings	5
PhD theses	4

6. Bibliography

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Wang, Y., Xia, W. and Giuntoli, A., *Optimizing Graphene Dispersion via Polymer Grafting*, Macromolecules, **58(5)**, pp. 2224-2236 (2025). doi:10.1021/acs.macromol.4c02249,

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2. Delft University of Technology – Mechanical Engineering

1. Senior academic staff

Dynamics of Micro and Nanosystems (PME)		
prof.dr. P.G. Steeneken	Full professor	0.40
dr. R.A. Norte	Associate professor	0.40
dr.ir. F. Alijani	Associate professor	0.40
dr. G. Verbiest	Associate professor	0.40
dr. S. Caneva	Assistant professor	0.40
Computational Design and Mechanics		
prof.dr.ir. M. Langelaar	Full professor	0.40
dr.ir. C. Ayas	Associate professor	0.40
dr.ir. A.M. Aragón	Associate professor	0.40
dr.ir. J.F.L. Goosen	Associate professor	0.40
dr. O. Nejadseyfi	Assistant professor	0.40
dr. H.J. Akay	Assistant professor	0.40
dr.ir. L.N. Noel	Assistant professor	0.40
Ship and Offshore Structures		
dr. J.J. Jovanova	Associate professor	0.40
dr.ir. L. Pahlavan	Associate professor	0.40
dr. C.L. Walters	Associate professor	0.40
dr. A. Grammatikopoulos	Assistant professor	0.40
dr.ir. J.H. den Besten	Assistant professor	0.40
Biomaterials and Tissue Biomechanics		
prof.dr. A.A. Zadpoor	Full professor	0.40
dr. M. Mirzaali	Associate professor	0.40
dr. N. Tumer	Assistant professor	0.40
Mechatronics System Design		
prof.dr.ir. J.L. Herder	Full professor	0.40
dr.ir. R.A.J. van van Ostayen	Associate professor	0.40
dr. S.H. HosseinNia	Associate professor	0.40
dr. J. Yang	Assistant professor	0.40
D. Farhadi	Assistant professor	0.20
	Total FTE[1]:	9.80

2. Running PhD-projects in 2025 related to research school EM

Dynamics of Micro and Nanosystems (PME)			
A. Anna	(PhD 3)	Nanomechanical sensors and integrated photonics	2025-10-15 – present
C.F.D. Wattjes	(PhD 3)	Nonlinear dynamics of 2D nanoresonators	2024-12-07 – present
E. Kartal	(PhD 3)	Frequency Stability of 2D Nanomechanical Oscillators	2024-10-01 – present
F.S.L. Wörtche	(PhD 3)	Cyberphysics and levitation for microchip assembly	2022-04-01 – present

[1]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

I. Gurbuz	(PhD 1)	Smart Microfiltration Membranes Against Biofouling	2024-09-16 – present
L.N. Norder	(PhD 3)	Nanomechanics and space-missions	2022-08-01 – present
M. Botermans	(PhD 2)	DNA Origami Nanoactuators for Molecular Diagnostics	2025-11-15 – present
N. Wansink	(PhD 2)	Atomic Force Microscopy and data-driven nonlinear dynamics for characterising viscoelasticity of coatings and paints	2024-03-01 – present
P.C.R. Castro Rodriguez	(PhD 1)	Combining integrated photonics with micromechanics for next generation high-fidelity microphones	2022-10-15 – present
R.T. Erdogan	(PhD 1)	Silicon Photonics Ultrasound Sensing	2021-09-15 – present
S.M.S. Mendoza Silva	(PhD 2)	Nanoscopic Mapping of Viscoelasticity in Coatings	2023-10-01 – present
V. Bos	(PhD 3)	Acoustic levitation	2021-11-01 – present
Y.L. Liu	(PhD 3)	Graphene Microphone	2025-03-01 – present
Z. Wang	(PhD 3)	Miniaturized flow control components for integrated microfluidics (F-Minis)	2023-01-01 – present

Computational Design and Mechanics

A.C. Garde	(PhD 2)	Advancing x-ray interferometry	2023-01-15 – present
F.W. Tieleman	(PhD 3)	AIAM: AI in additive manufacturing	2025-10-01 – present
J.M. Zwet	(PhD 2)	Novel thermo-dynamic solutions	2021-11-01 – present
K.L. Li	(PhD 1)	AI-Driven Generative Engineering Design from Qualitative and Quantitative Requirements	2025-09-15 – present
L. Maga	(PhD 1)	Modeling Cardiac Tissue Growth and Remodeling	2022-09-01 – present
M. Slebioda	(PhD 3)	NXTGEN Hightech	2024-01-05 – present
M. Zhang	(PhD 3)	Metamaterial and Origami based Beam Flexure for High-tech Precision Mechanisms	2022-08-15 – present
M.S. Arifin	(PhD 2)	AI-driven Holistic Design and Control Tools for Planar Motors (AIDEAL)	2025-10-01 – present
N. Hermann	(PhD 1)	Design for Protection	2021-09-01 – present
P.T. Kühner	(PhD 2)	Steering Fracture with Metamaterials (FAME): Turning failure into function	2024-09-01 – present

P. Thakolkaran	(PhD 1)	Learning hidden representations for material design and modeling	2021-09-01 – present
S. Manoj Sanu	(PhD 1)	Generative machine learning for topology optimization	2021-12-01 – present
Y. Yang	(PhD 1)	Process modelling of metal additive manufacturing: towards microstructure control	2021-01-10 – present
Y. Yan	(PhD 3)	Computational Analysis and Design of Origami Structures for Programmable and Tunable Vibration Isolation	2021-03-31 – present

Ship and Offshore Structures

A. Jena	(PhD 3)	MOWSES	2025-04-07 – present
A. Jena	(PhD 3)	MOWSES (Code: P91811)	2025-05-15 – present
A. Jena	(PhD 3)	MOWSES project - project code P91811	2025-05-15 – present
A.A.A. Thomas	(PhD 3)	Dynamic Modelling and Design of Smart Metamaterial for Impact-absorbing Mounts	2023-12-01 – present
C.S. Saccone	(PhD 3)	FUSION	2023-03-01 – present
C.M. Van Zijl	(PhD 1)	Non-linear structural dynamics in fluid-structure interaction	2023-02-01 – present
F. Riccioli	(PhD 1)	Digital twinning of mooring systems	2022-01-01 – present
J.J. Reijmers	(PhD 1)	PHAReB	2023-09-11 – present
K.A.C. Canny	(PhD 2)	Environmental Vibrations and Acoustic Emissions from Offshore Foundation Installation	2024-10-01 – present
L.P. Lagendijk	(PhD 2)	ECoProp	2022-10-01 – present
L. Hohaus	(PhD 1)	Structural Health Monitoring of Fiber-reinforced Composite Ships	2025-08-01 – present
M.A.A.M. Adly	(PhD 2)	Advanced failure modelling for safety of welded steel ship structures	2021-09-01 – present
N.C.H. Troost	(PhD 2)	Resurgam	2021-04-04 – present
P.D. Gowda	(PhD 3)	HybridLabs – Accelerating Dutch Innovations in Offshore Renewables Through Data-Driven Hybrid Labs	2024-03-01 – present
P.D. Gowda	(PhD 2)	Sensing and Prediction of Corrosion Fatigue of Welded Joints in Floating Offshore Wind Turbines	2024-03-01 – present

R.H. Habiyaremye	(PhD 2)	Detection, identification and characterization of corrosion damage in acoustic emission based structural health monitoring systems	2023-09-15 – present
R.L.G. Slange	(PhD 2)	FUSION	2023-11-01 – present
Biomaterials and Tissue Biomechanics			
A.M.A.A.A. Al-Sanea	(PhD 3)	Design and Fabrication of 3D Random Bone Microarchitecture Scaffolds and their Role in Bone Fracture	2024-09-01 – present
E.T. Tay	(PhD 1)	Correction of bone deformities in children with developmental hip disease	2022-12-01 – present
G.B. Byrne	(PhD 3)	Experimental Mechanical Characterization of the Heart Wall for Computational Model	2024-09-25 – present
J.L.I. Li	(PhD 3)	3D printed porous networks for in vitro tissue model growth	2022-02-15 – present
L.B. Kunkels	(PhD 1)	Biomimetic Hard-Soft Interfaces	2022-03-15 – present
M.M.G. Mahmoodi Gahrouei	(PhD 2)	Studying the development of hip growth using mechanistic models	2024-02-01 – present
M.R. Homayounfar	(PhD 1)	Creating a 5D hip growth model and discovering study hip joint growth trajectories using AI models	2023-08-01 – present
N.S. Shahriari	(PhD 3)	Developing Patient-specific multi-functional mandibular implants	2023-07-01 – present
P.M. Magnard	(PhD 3)	Pantarei	2025-04-01 – present
R.P. Krijnen	(PhD 1)	Data-driven and Physics-based inference of Multi-scale Cardiac Tissue Behavior	2024-02-01 – present
S. Hörmann	(PhD 2)	Estimation of knee joint forces in different activities using personalized musculoskeletal models and physics-informed neural networks	2024-01-04 – present
S.S. Safarloo	(PhD 1)	Development of integrated sensors to investigate cell mechanobiology	2023-01-06 – present
S. Cardona	(PhD 1)	Modeling Cardiovascular Cell-Tissue Interaction	2024-10-01 – present

S.N. Nuvoli	(PhD 1)	Investigating cellular responses to local structural heterogeneity and mechanical loading in engineered (osteoarthritic) cartilage models	2025-05-01 – present
S. Panahkhahi	(PhD 2)	Biomimetic design, fabrication and characterization of hard-to-soft connections	2023-09-04 – present
S.C. Chowdhury	(PhD 3)	3D Printing and Biological Testing of Bio-waste Derived Meta-materials	2025-04-01 – present
Mechatronics System Design			
A.M. Natu	(PhD 3)	Active Damping Control of Piezoelectric Nanopositioning Systems	2023-09-01 – present
C. Song	(PhD 2)	Mechatronic Metamaterials for Dynamic Mode Suppression	2021-12-01 – present
D.M. Syaifoel	(PhD 2)	After harvest robotics	2023-07-01 – present
E.P.R. Ronaes	(PhD 2)	Beat the heat: zero heat dissipation and energy efficient electromagnetic actuator	2023-04-01 – present
M.A. ten Wolde	(PhD 1)	Intelligent Mechanical Metamaterials	2021-09-15 – present
P.R. Roberjot	(PhD 1)	Design of mechanical metamaterials for compact motion systems	2022-09-01 – present
S.H.E. He	(PhD 1)	Contactless Handling System for Thin Substrate.	2022-04-01 – present
T.A. Baaij	(PhD 3)	Contactless particle free wafer handling	2024-02-01 – present
X. Guan	(PhD 1)	Periodic porous Acoustic absorber based on Triply Periodic Minimal Surface	2024-01-01 – present

3. Postdocs

Dynamics of Micro and Nanosystems (PME)		
A.M.P. Martín-Pérez	(PD 3)	Protein Phototermal Optomechanical Analyzer
L.V. Fricke	(PD 2)	Novo Coat
M. Kabatas	(PD 3)	Enose
Computational Design and Mechanics		
M.J.B. Theulings	(PD 2)	Artificial intelligence for the dynamics of 2D metamaterials
M. Costa	(PD 2)	FAME
Ship and Offshore Structures		
A.J. Huijer	(PD 2)	Development of measurement techniques based on an embedded network of piezoelectric sensors that can monitor hydrodynamic loads and detect damage in a composite marine propeller during operations
A. Anjali	(PD 3)	HyTROS

A.J.J. Bram	(PD 3)	Merganser
W.J. Wong	(PD 3)	Modelling fracture in the ductile-to-brittle transition
Biomaterials and Tissue Biomechanics		
A.T. ŞENSOY	(PD 1)	Theoretical and Experimental Evaluation of Biomimetic Total Temporomandibular Implants Designed by Topology Optimization and Manufactured by using Multi-Material Additive Manufacturing Method
Z.J. Javanbakht	(PD 1)	Inverse design of random lattice structures using machine learning
Mechatronics System Design		
D.B. bulut	(PD 1)	Full Film Lubrication

4. Dissertations

Dynamics of Micro and Nanosystems (PME)
A.S. Sarafraz, *Nonlinear Mechanics of Suspended Ultra-thin Membranes*, 2025-05-22. Supervisors: Prof.dr. ir. P. Steeneken, dr. ir. F. Alijani.

M. Xu, *Probing the Effect of Superconductivity on the Casimir Force On-Chip with STM*, 2025-10-22. Supervisors: R.A. Norte, S. Otte, P.G. Steeneken.

R.H. Guis, *PhotoAcoustic SubSurface Atomic Force Microscopy*, 2025-04-30. Supervisors: Prof. dr. ir. P. Steeneken, dr. ir. G. Verbiest.

Z. Li, *Optimization of Nonlinear Dynamics in Nanomechanical Resonators*, 2025-05-13. Supervisors: Prof. dr. ir. P. Steeneken, dr. ir. F. Alijani.

Computational Design and Mechanics
G.R. Reales, *Computational Optimization of Minimum Ionizing Timing Detector Components*, 2025-06-30. Supervisors: Prof.dr.ir. Keulen, A van, Dr.ir. H. Goosen, dr. ir. A. Arajon.

M.J.B. Theulings, *Topology optimization of transient fluidic and thermal devices*, 2025-06-16. Supervisors: Prof.dr.ir. A. van Keulen, dr. ir. M.Langelaar.

R.J.P. Giele, *Topology Optimization with Geometric Cleanability Requirements*, 2025-11-21. Supervisors: M. Langelaar, C. Ayas .

Ship and Offshore Structures
W.J. Wong, *On the Ductility at Plastic Localisations in Steel Structures*, 2025-09-16. Supervisors: M. Veljkovic, C.L. Walters.

Biomaterials and Tissue Biomechanics
E. Yarali, *3D and 4D printed meta-biomaterials for bone tissue engineering*, 2025-04-24. Supervisors: Zadpoor, A.A., Promotor Accardo, A., Copromotor, Mirzaali, M. J., Copromotor.

Mechatronics System Design
X. Zhang, *Frequency-Domain Analysis and Design for Reset Feedback Control*, 2025-04-24. Supervisors: Prof. dr. ir. Herder, J, dr. ir. H. HosseinNia, H.

5. Overview of research input and output Mechanical Engineering related to EM, 2025

Input

	Sources of financing[2]			Total	
	1	2	3	#	FTE
Senior academic staff[3]	25	0	0	25	9.8
PhD[4]	24	20	26	70	56.0
Postdoc[5]	3	4	5	12	9.6
Total	52	24	31	107	75.4

Output

	Total
Scientific publications: refereed journals	90
Scientific publications: books, chapters in book	3
Scientific publications: refereed proceedings	12
PhD theses	10

6. Bibliography

Journal articles

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Alimohammadi, H., Vassiljeva, K., HosseinNia, S.H. and Petlenkov, E., *Stability analysis and energy harvesting in lumped parameter systems with internally coupled resonators*, JVC/Journal of Vibration and Control, **31(7-8)**, pp. 1210-1222 (2025). doi:10.1177/10775463241241161,

Aragón, A.M. and Algra, H.J., *ARCADE: an interactive playground for immersive topology optimization*, Structural and Multidisciplinary Optimization, **68(12)**, (no pages found) (2025). doi:10.1007/s00158-025-04152-2,

[2](1): University; (2): NWO etc.; (3): Industry, TNO, EC-funds, etc.

[3]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

[4]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

[5]Research input for PD per year: 0.8 FTE. The PD research input is only to be included until 2 years after the appointment of the PD researcher.

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3. Delft University of Technology – Civil Engineering and Geosciences

1. Senior academic staff

Computational Mechanics Structural Mechanics and Dynamics		
prof.dr.ir. L.J. Sluys	Full professor	0.40
prof.dr.ir. A.V. Metrikine	Full professor	0.40
dr.ir. K.N. van Dalen	Associate professor	0.40
dr.ir. F.P. van der Meer	Associate professor	0.16
dr. A.C. Cabboi	Assistant professor	0.40
dr.ir. A. Tsouvalas	Assistant professor	0.20
dr. R. Esposito	Assistant professor	0.40
dr. A. Anisimov	Assistant professor	0.40
dr.ir. A.B. Faragau	Assistant professor	0.40
dr.ir. E. Lourens	Assistant professor	0.20
dr. I. Rocha	Assistant professor	0.40
dr.ir. H. Hendrikse	Assistant professor	0.40
dr. M. Lesueur	Assistant professor	0.40
dr. Z. Nan	Assistant professor	0.40
	Total FTE[1]:	4.96

2. Running PhD-projects in 2025 related to research school EM

Computational Mechanics Structural Mechanics and Dynamics			
A. Ghezelbash	(PhD 1)	Computational modelling of interaction between in-plane and out-of-plane behavior in masonry walls	2022-05-01 – present
A. Poot	(PhD 1)	The Bayesian Finite Element Method	2021-08-16 – present
B.V.A. de Almeida	(PhD 2)	Topology optimization of active piezocomposite metamaterials considering manufacturable feature sizes	2022-09-26 – present
E. Sulollari	(PhD 1)	Vibration-Induced Friction Force Modulation	2021-09-01 – present
F.W. Wang	(PhD 2)	Advanced stochastic seismic inversion and testing to capture variability of damping ratio in soil for accurate site-response analysis	2024-10-01 – present
F. Besseling	(PhD 3)	HIDDEN	2023-11-01 – present
G. Cera	(PhD 3)	Masonry damage modelling to support fragility frameworks for subsidence	2022-12-01 – present
H.A. Alkisaei	(PhD 2)	Waste and manufactured building blocks for a circular structural design methodology	2024-03-01 – present
J. Storm	(PhD 1)	Accelerating Multiscale Finite Element Models with Active Learning Surrogates	2021-07-01 – present

[1]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

L.F. Riccius	(PhD 1)	Bayesian Machine Learning for Multiscale Modeling of 3D-printed Materials	2021-07-01 – present
L. Huber	(PhD 2)	Nonlinear-dynamics-based methodology for improved interpretation of geotechnical experimental data for accurate site-response studies	2024-11-20 – present
M.N.S. Das	(PhD 2)	Space-time Optimization for Additive Manufacturing	2023-11-01 – present
M. Slebioda	(PhD 3)	NXTGEN Hightech	2024-01-05 – present
M.A.M. Maia	(PhD 1)	Physics-informed machine learning surrogate models for complex materials	2021-02-01 – present
P.H. Hofman	(PhD 2)	Computational Modeling of Progressive Failure in Bonded Composite Parts	2021-12-01 – present
R. Melo Barros	(PhD 3)	Efficient techniques for the assessment of uncertainties of physics-based models on the design of critical components	2024-05-15 – present
R.B. Bol	(PhD 2)	Multi-Scale Modelling of Auxetic Cementitious Composites	2022-09-15 – present
S. Basile	(PhD 2)	Drive system of a resonant Flappy Wings Micro Aerial Vehicle	2023-05-01 – present
S.F. Zwarts	(PhD 1)	Rock mechanics under cyclic hydrogen storage	2023-06-15 – present
S. Song	(PhD 3)	Experimental characterization and modelling of friction-related uncertainties for offshore applications	2025-05-15 – present
T. Gärtner	(PhD 3)	Computational modelling of mechanical metamaterials for impact protection	2021-04-01 – present
S. Srikanth	(PhD 1)	Smart Flying V	2021-09-01 – present
X. Zhang	(PhD 1)	Experimental/Computational investigation on the mechanical properties of 3D printed material	2022-03-01 – present
Y.P. Park	(PhD 1)	Robust Topology Optimization for Sustainable Manufacturing	2024-01-04 – present
Y. Zhang	(PhD 3)	Composite slab design assessment with deep profiled steel sheeting	2023-07-15 – present

3. Postdocs

Computational Mechanics Structural Mechanics and Dynamics

J. Paul	(PD 2)	HySpeed
P.A. Atzampou	(PD 2)	Contactless position control of offshore wind turbines during the installation

4. Dissertations

Computational Mechanics Structural Mechanics and Dynamics

A.J. Avni , *Railway Transition Zones: An Energy Approach for Design, Evaluation and Mitigation*, 2025-02-24. Supervisors: A.V. Metrikine, K.N. van Dalen, M.J.M.M. Steenbergen.

T. Gärtner, *Are Auxetics Better for Protection? On the Behaviour of Architected Metamaterials under High-Rate Loading Conditions*, 2025-11-03. Supervisors: Sluijs, L.J., Promotor Weerheijm, J., Copromotor.

5. Overview of research input and output Civil Engineering and Geosciences related to EM, 2025

Input

	Sources of financing[2]			Total	
	1	2	3	#	FTE
Senior academic staff[3]	14	0	0	14	5.0
PhD[4]	10	8	7	25	20.0
Postdoc[5]	0	2	0	2	1.6
Total	24	10	7	41	26.6

Output

	Total
Scientific publications: refereed journals	32
Scientific publications: books, chapters in book	12
Scientific publications: refereed proceedings	15
PhD theses	2

6. Bibliography

Journal articles

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[2](1): University; (2): NWO etc.; (3): Industry, TNO, EC-funds, etc.

[3]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

[4]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

[5]Research input for PD per year: 0.8 FTE. The PD research input is only to be included until 2 years after the appointment of the PD researcher.

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Fărăgău, A.B., Jain, A., Metrikine, A.V. and van Dalen, K.N., *The Influence of Vehicle Direction of Motion in Response Amplification at Railway Transition Zones*, ICRT 2024 - Proceedings of the 3rd International Conference on Rail Transportation, no volume, pp. 201-209 (2025). doi:10.1061/9780784485941.022,

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4. Delft University of Technology – Aerospace Engineering

1. Senior academic staff

Aerospace Structures and Computational Mechanics		
prof.dr.ir. C. Bisagni	Full professor	0.40
prof.dr. C. Kassapoglou	Full professor	0.40
C.A. Dransfeld	Full professor	0.40
prof. K. Masania	Associate professor	0.40
dr.ir. J.J.E. Teuwen	Associate professor	0.40
ir. T. Sijpkes	Associate professor	0.40
dr.ir. S.R. Turteltaub	Associate professor	0.40
dr. S.J. García	Associate professor	0.20
dr.ir. R.C. Alderliesten	Associate professor	0.40
dr.ir. R. de Breuker	Associate professor	0.40
dr. B. Chen	Assistant professor	0.40
dr. B.G. Giovanardi	Assistant professor	0.40
dr. X. Wang	Assistant professor	0.40
dr. Y.T. Tang	Assistant professor	0.40
B. Caglar	Assistant professor	0.40
dr.ing. S.G.P. Castro	Assistant professor	0.40
dr.ir. J.M.J.F. van Campen	Assistant professor	0.40
dr.ir. N. Yue	Assistant professor	0.40
dr.ir. D.M.J. Peeters	Assistant professor	0.40
Wind Energy		
F. de Prenter	Assistant professor	0.20
dr. D.Z. Zappala	Assistant professor	0.40
	Total FTE[1]:	8.00

2. Running PhD-projects in 2025 related to research school EM

Aerospace Structures and Computational Mechanics			
A.M. Mohan	(PhD 1)	A Non-Destructive Approach to Material Degradation Assessment Using Nonlinear Ultrasonic Guided Wave Interactions	2024-06-01 – present
A.P.P. Pereira do Prado	(PhD 3)	ATED – AEROELASTIC TAILORING ENABLED DESIGN	2022-02-21 – present
A.T. bayrak	(PhD 1)	Methodologies for analysis, testing and certification of welded thermoplastic composite aerostructures	2024-07-12 – present
A.M. Pereira	(PhD 3)	Methodology for the design and analysis towards certification of butt-joint thermoplastic composite orthogrid stiffened panels	2022-04-15 – present
A. Schiller	(PhD 3)	SUSTAINair	2021-03-01 – present

[1]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

A.M. Wulff	(PhD 1)	Quantum and machine learning methods for stacking retrieval of laminated composite materials	2022-08-01 – present
A. Malladi	(PhD 3)	Fiber Path Planning for High Gaussian Curvature Structures Optimised for Automated Fiber Placement	2024-08-15 – present
B.T. Tallapragada	(PhD 3)	Extreme Mechanics of Architected Materials	2024-01-15 – present
B. Saify	(PhD 2)	Flying V Flight Control	2023-03-01 – present
C. Oliveira	(PhD 3)	Reliablade 2	2024-08-15 – present
C.H. Cheng	(PhD 3)	Design of Embodied-Intelligence Robotics Grippers for Multi-functional Manipulation	2025-03-01 – present
C.L. Lankhof	(PhD 3)	Voxel-level tayloring of the properties of composite materials	2024-01-16 – present
D. Raso	(PhD 2)	Tentative: A thermomechanically coupled discontinuous Galerkin / cohesive zone framework for modelling damage in laminated structures	2024-09-02 – present
D. Eijkelhof	(PhD 2)	Weight scaling of fixed-wing airborne wind energy kites.	2022-05-12 – present
E. Filippou	(PhD 3)	Harnessing Aeroelastic Control Reversal for Extreme Load Alleviation	2023-05-01 – present
F.J.S.O. Sanchez Olivera	(PhD 3)	Effect of defects in wind turbine blades manufacturing	2024-09-16 – present
G. Ismayilova	(PhD 3)	PREDICTING AND REDUCING THICKNESS VARIATIONS IN AFP	2024-08-15 – present
G. Frattini	(PhD 3)	Multiscale modelling of manufacturing of composite aerostructures with short thermoplastic tapes	2024-12-01 – present
G.P. Sahu	(PhD 3)	Nonlinear guided waves for early-stage damage detection in aerospace thermoplastic materials for lightweight hydrogen storage	2024-06-01 – present
H.F. Maathuis	(PhD 3)	Aeroelastic Tailoring Enabled Design	2022-05-01 – present
I.T. Tsatsas	(PhD 3)	A Hybrid Test Methodology for Full-Scale Aeroelastic Testing of Camber Morphing Technology	2024-06-01 – present
I. Birgaoanu-Acaei	(PhD 2)	Reliability-based strength prediction of ultrasonically welded thermoplastic joints	2022-09-15 – present

I. Birgaoanu-Acaei	(PhD 2)	Reliability-based strength prediction of ultrasonically welded thermoplastic joints	2022-09-15 – present
I. Komala	(PhD 1)	Optimization of composite pressure vessels subject to thermo-mechanical loading conditions for cryogenic hydrogen storage	2024-01-15 – present
J. Carvalho	(PhD 1)	Composite Materials with Architected Discontinuities	2025-07-01 – present
K.J. Mesman	(PhD 1)	QAIMS - Learning surrogate modelling	2022-09-15 – present
L.A. Afilal	(PhD 1)	Influence of AFP defects and low temperature on planar delamination behaviour	2024-09-09 – present
M.A. Patrick	(PhD 2)	Fatigue and Damage Tolerance of Cold Spray Additive Repairs	2024-04-01 – present
M.A. Raja	(PhD 3)	Data-Driven Computational Micromechanics: A Deep Neural Network Framework for Accurate and Efficient Composite Design with Defect Integration	2024-09-01 – present
M.H.I. Elalfy	(PhD 1)	Aeroelastic Tailoring Enabled Design	2022-01-01 – present
M.A. Amani	(PhD 1)	Manufacturing of living composites	2021-08-18 – present
P.G. Georgopoulos	(PhD 1)	Development of Multiple Degree of Freedom Camber Morphing Wing	2022-05-15 – present
P.W. Wurzner	(PhD 1)	Materials Modelling of High Temperature Ceramics Under Solar Radiation with Quantum Machine Learning	2022-09-12 – present
R.B. Brambilla	(PhD 3)	The role of curvature in fracture mechanics of architected materials	2024-04-01 – present
S.K. Kota	(PhD 1)	Computational modelling of fracture in beam-based architected materials under impact loading	2021-10-16 – present
S.J. van Elsloo	(PhD 3)	Manned-unmanned teaming through safe in-flight launch and recovery of unmanned aircraft systems	2022-07-15 – present
S.V. Vega Rocabado	(PhD 3)	Cold Spray for Repairs	2025-09-01 – present
S.A. Anand	(PhD 1)	Low-fidelity modelling of vertical drop for metallic fuselage sections	2021-12-15 – present

S. Pantoji	(PhD 1)	On The Differences Between As-Designed and As-Manufactured Automated Fiber Placement (AFP) Composites	2022-02-01 – present
S. de Boer	(PhD 3)	Control Surface Layout Optimisation	2023-01-15 – present
M.V. Madabhushi Venkata	(PhD 1)	Optimization of Laminated Composites	2022-08-08 – present
V.K. Poorte	(PhD 1)	Hydrogen Storage for Civil Aviation	2021-10-01 – present
Wind Energy			
C. Spyropoulos	(PhD 3)	Flow induced vibrations in wind turbines: Numerical modeling, sensitivity analysis and uncertainty quantification	2025-03-15 – present

3. Postdocs

Aerospace Structures and Computational Mechanics

C.V. JANSARI	(PD 3)	NXTGEN- E mobility - Optimization methods for design for efficient automated production including topology optimization for 3D printed composite
G. Tosti Balducci	(PD 3)	Quantum Prognostics
N. Garg	(PD 3)	Life cycle evaluation and design of thermoplastic hydrogen storage vessels.
W.F.L. Lindqwister	(PD 3)	MOLIERE: DevelopMent of biOlogicalLy-Inspired sandwich structurEs for aeRospacE applications
Wind Energy		
R.S. Battu	(PD 3)	Reliablade2

4. Dissertations

Aerospace Structures and Computational Mechanics

I. Uriol, *A scaling methodology for axial buckling of sandwich composite cylindrical shells*, 2025-06-19. Supervisors: C. Bisagni, R. De Breuker.

K.S. van Dooren, *Thermoplastic composite stiffened structures in post-buckling*, 2025-03-15. Supervisors: Bisagni, C., Promotor Turteltaub, S.R., Promotor.

5. Overview of research input and output Aerospace Engineering related to EM, 2025

Input

	Sources of financing[2]			Total	
	1	2	3	#	FTE
Senior academic staff[3]	21	0	0	21	8.0
PhD[4]	16	6	21	43	34.4
Postdoc[5]	0	0	5	5	4.0

Total	37	6	26	69	46.4

Output

	Total
Scientific publications: refereed journals	68
Scientific publications: books, chapters in book	2
Scientific publications: refereed proceedings	19
PhD theses	2

6. Bibliography

Journal articles

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[4]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

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Woldhuis, T., Asaro, S. and Wang, X., *Online Data-Driven Optimization of Aerodynamic Performance for an Unconventional Morphing Aircraft*, AIAA Science and Technology Forum and Exposition, AIAA SciTech Forum 2025, no volume, (no pages found) (2025). doi:10.2514/6.2025-2804,

da Costa, T.F., Villa, A., Rans, C. and Castro, S.G., *Crashworthiness Assessment of the Flying-V Under Complex Crash Scenarios with Partially Detailed Structures*, AIAA Science and Technology Forum and Exposition, AIAA SciTech Forum 2025, no volume, (no pages found) (2025). doi:10.2514/6.2025-0622,

5. Delft University of Technology – Electrical Engineering, Mathematics & Computer Science

1. Senior academic staff

Numerical Analysis

prof.dr.ir. C. Vuik	Full professor	0.20
prof.dr.ir. M.B. van Gijzen	Full professor	0.40
dr. M. Möller	Associate professor	0.40
dr. A. Palha	Associate professor	0.40
dr. A.H. Heinlein	Assistant professor	0.40
dr. D. Toshniwal	Assistant professor	0.40
	Total FTE[1]:	2.20

2. Running PhD-projects in 2025 related to research school EM

Numerical Analysis

D.C. Cabanas	(PhD 3)	An Isogeometric Discretization of Linear Elasticity using Finite Element Exterior Calculus	2023-10-15 – present
J. Li	(PhD 2)	Flexible Floating Structure Modelling and Analysis	2023-07-01 – present
J. Dekker	(PhD 1)	Efficient structure-preserving isogeometric discretizations for fluid flow problems on complex geometries	2023-11-15 – present
K.W. Dijkstra	(PhD 1)	Variational Multiscale methods for the Magnetohydrodynamics equations	2023-01-01 – present
K.K. Kevopoulos	(PhD 2)	Scientific machine learning for cardiovascular digital twins	2024-11-15 – present
K.A. Slepova	(PhD 1)	PDE-based segmentation methods for noisy MRI scans	2024-01-26 – present

3. Postdocs

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4. Dissertations

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[1]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

5. Overview of research input and output Electrical Engineering, Mathematics & Computer Science related to EM, 2025

Input

	Sources of financing[2]			Total	
	1	2	3	#	FTE
Senior academic staff[3]	6	0	0	6	2.2
PhD[4]	3	2	1	6	4.8
Postdoc[5]	0	0	0	0	0.0
Total	9	2	1	12	7.0

Output

	Total
Scientific publications: refereed journals	20
Scientific publications: books, chapters in book	0
Scientific publications: refereed proceedings	4
PhD theses	0

6. Bibliography

Journal articles

Berger, S., Hosters, N. and Möller, M., *Trainable embedding quantum physics informed neural networks for solving nonlinear PDEs*, Scientific Reports, **15(1)**, (no pages found) (2025). doi:10.1038/s41598-025-02959-z,

Chen, J., Dwarka, V. and Vuik, C., *Matrix-Free Parallel Scalable Multilevel Deflation Preconditioning for Heterogeneous Time-Harmonic Wave Problems*, Journal of Scientific Computing, **102(2)**, (no pages found) (2025). doi:10.1007/s10915-024-02786-w,

Georgescu, C.A., Schalkers, M.A. and Möller, M., *QLBM – A quantum lattice Boltzmann software framework*, Computer Physics Communications, **315**, (no pages found) (2025). doi:10.1016/j.cpc.2025.109699,

Giammatteo, E., Heinlein, A. and Schlottbom, M., *An extension of the approximate component mode synthesis method to the heterogeneous Helmholtz equation*, IMA Journal of Numerical Analysis, **45(5)**, pp. 2844-2879 (2025). doi:10.1093/imanum/drae076,

[2](1): University; (2): NWO etc.; (3): Industry, TNO, EC-funds, etc.

[3]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

[4]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

[5]Research input for PD per year: 0.8 FTE. The PD research input is only to be included until 2 years after the appointment of the PD researcher.

Giammatteo, E., Heinlein, A., Lederer, P.L. and Schlottbom, M., *High-order discretized ACMS method for the simulation of finite-size two-dimensional photonic crystals[Figure presented]*, Computers and Mathematics with Applications, **196**, pp. 376-394 (2025). doi:10.1016/j.camwa.2025.08.013,

Grimm, V., Heinlein, A. and Klawonn, A., *Learning the solution operator of two-dimensional incompressible Navier-Stokes equations using physics-aware convolutional neural networks*, Journal of Computational Physics, **535**, (no pages found) (2025). doi:10.1016/j.jcp.2025.114027,

Heinlein, A. and Smetana, K., *ALGEBRAIC CONSTRUCTION OF ADAPTIVE COARSE SPACES FOR TWO-LEVEL SCHWARZ PRECONDITIONERS*, SIAM Journal on Scientific Computing, **47(2)**, pp. A1170-A1197 (2025). doi:10.1137/23M1618193,

Husanovic, S., Egberts, G., Heinlein, A. and Vermolen, F., *Deep operator network models for predicting post-burn contraction*, Clinical Biomechanics, **127**, (no pages found) (2025). doi:10.1016/j.clinbiomech.2025.106558,

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Misaghi Bonabi, A., van Rooijen, W., Al Kobaisi, M., Vuik, C. and Hajibeygi, H., *Comparative analysis of carbon dioxide and hydrogen plume migration in aquifers inspired by the Fluid-Flower benchmark study*, International Journal of Hydrogen Energy, **135**, pp. 56-68 (2025). doi:10.1016/j.ijhydene.2025.04.401,

Nguyen, B.V., Romate, J. and Vuik, C., *Modeling an Electrolyzer in a Graph-Based Framework*, Energies, **18(3)**, (no pages found) (2025). doi:10.3390/en18030729,

Roos, P.R., Thijs, J.J., in de Braekt, T., Eerdekens, R., Houthuizen, P., Tonino, P.A., van den Bosch, H.C., Hamel, D., Vuik, C., Kenjeres, S., et al., *Noninvasive Left Ventricular Pressure–Volume Loops Based on Combined 4D Flow MRI and CFD*, Applied Sciences (Switzerland), **15(22)**, (no pages found) (2025). doi:10.3390/app152212305,

Saha, A., Stelling, G. and Vuik, C., *Modified Horton's infiltration model integrated with a Sub-Grid shallow water equation solver for High-Resolution flooding simulation*, Journal of Hydrology, **660**, (no pages found) (2025). doi:10.1016/j.jhydrol.2025.133326,

Shang, Y., Heinlein, A., Mishra, S. and Wang, F., *Overlapping Schwarz preconditioners for randomized neural networks with domain decomposition*, Computer Methods in Applied Mechanics and Engineering, **442**, (no pages found) (2025). doi:10.1016/j.cma.2025.118011,

Suriyababu, V.K., Vuik, C. and Möller, M., *Resampling Point Clouds Using Series of Local Triangulations*, Journal of Imaging, **11(2)**, (no pages found) (2025). doi:10.3390/jimaging11020049,

Verburg, C., Heinlein, A. and Cyr, E.C., *DDU-Net: A Domain Decomposition-Based CNN for High-Resolution Image Segmentation on Multiple GPUs*, IEEE Access, **13**, pp. 66967-66983 (2025). doi:10.1109/ACCESS.2025.3561033,

Verhelst, H.M., Möller, M. and Den Besten, J.H., *A wrinkling model for general hyperelastic materials based on tension field theory*, Computer Methods in Applied Mechanics and Engineering, **441**, (no pages found) (2025). doi:10.1016/j.cma.2025.117955,

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Yang, Y., Ji, Y., Möller, M. and Ayas, C., *Computational efficient process simulation of geometrically complex parts in metal additive manufacturing*, International Journal of Heat and Mass Transfer, **248**, (no pages found) (2025). doi:10.1016/j.ijheatmasstransfer.2025.127059,

Zandbergen, A., van Noorden, T. and Heinlein, A., *Improving pseudo-time stepping convergence for CFD simulations with neural networks*, Computers and Mathematics with Applications, **196**, pp. 64-83 (2025). doi:10.1016/j.camwa.2025.07.006,

Books and book chapters

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Refereed proceedings

Heinlein, A., Howard, A.A., Stinis, P. and Beecroft, D., *Multifidelity domain decomposition-based physics-informed neural networks and operators for time-dependent problems*, De Gruyter Proceedings in Mathematics, no volume, pp. 79-91 (2025). doi:10.1515/9783111376776-006,

Kaseb, Z., Möller, M., Kirsch, M., Palensky, P. and Vergara, P.P., *Combinatorial Power Flow Analysis using Adiabatic Quantum Algorithms*, 2025 IEEE Kiel PowerTech, PowerTech 2025, no volume, (no pages found) (2025). doi:10.1109/PowerTech59965.2025.11180445,

Nguyen, B.V., Romate, J. and Vuik, C., *Performance of Krylov solvers for gas networks*, E-ENERGY 2025 - Proceedings of the 2025 16th ACM International Conference on Future and Sustainable Energy Systems, no volume, pp. 489-494 (2025). doi:10.1145/3679240.3734600,

Saha, T.S., Heinlein, A. and Reisch, C., *Towards Model Discovery Using Domain Decomposition and PINNs*, IFAC-PapersOnLine, **59(1)**, pp. 37-42 (2025). doi:10.1016/j.ifacol.2025.03.008,

6. Eindhoven University of Technology – Built Environment

1. Senior academic staff

Applied Mechanics

prof.dr.ir. A.S.J. Suiker	Full professor	0.40
dr.ir. H. Hofmeyer	Associate professor	0.40
dr. E. Bosco	Associate professor	0.40
dr. P. Poorsolhjouy	Assistant professor	0.40
	Total FTE[1]:	1.60

2. Running PhD-projects in 2025 related to research school EM

Applied Mechanics

A.B. Budhathoki	(PhD 3)	Multiscale modeling of canvas paintings: Project VANGOGH	2025-09-01 – present
A.B.B. Bagheri Behboud	(PhD 2)	Experimental Micro-mechanics for Cultural Heritage	2023-09-01 – present
D.W. Westert	(PhD 2)	Experimental Micro-Mechanics for Canvas Paintings	2024-11-04 – present
E.A. Dizman	(PhD 2)	A numerical approach to predict aging and degradation of oil paintings	2023-04-01 – present
K. Hutchinson	(PhD 1)	Forensic Biomechanics for Infant Injury Investigation	2022-10-15 – present
T. Ezendam	(PhD 2)	Realistic geometries for optimal structural, thermal, and lighting performance, IQD and user interaction for real-world design support	2021-03-29 – present
Z. Chen	(PhD 1)	Development of a multi-scale computational method for predicting the mechanical properties of coated fabrics	2023-11-03 – present

3. Postdocs

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4. Dissertations

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[1]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

5. Overview of research input and output Built Environment related to EM, 2025

Input

	Sources of financing[2]			Total	
	1	2	3	#	FTE
Senior academic staff[3]	4	0	0	4	1.6
PhD[4]	2	4	1	7	5.6
Postdoc[5]	0	0	0	0	0.0
Total	6	4	1	11	7.2

Output

	Total
Scientific publications: refereed journals	6
Scientific publications: books, chapters in book	1
Scientific publications: refereed proceedings	2
PhD theses	0

6. Bibliography

Journal articles

Livani, M.A., Suiker, A.S. and Bosco, E., *Level set-based image segmentation of μCT scanned oak micro-structures with an analysis of morphological features*, Wood Science and Technology, **59(4)**, (no pages found) (2025). doi:10.1007/s00226-025-01660-8,

Livani, M.A., Suiker, A.S., van Maris, M.P. and Bosco, E., *Level set-based XFEM modelling of the multi-scale hygro-mechanical behaviour of oak wood using morphological input from μCT*, Computational Mechanics, **76(3)**, pp. 635-658 (2025). doi:10.1007/s00466-025-02618-0,

Maraghechi, S., Bosco, E., Hoefnagels, J.P., Suiker, A.S., Keune, K. and Noble, P., *Multi-scale mechanical characterization of the lining canvas of The Night Watch by Rembrandt*, npj Heritage Science, **13(1)**, (no pages found) (2025). doi:10.1038/s40494-025-02215-7,

Pereverdieva, K., Emmerich, M., Deutz, A., Hofmeyer, H., Ezendam, T. and Back, T., *An Alignment Method and a Dissimilarity Measure for 3D Building Spatial Designs*, IEEE Access, **13**, pp. 195599-195610 (2025). doi:10.1109/ACCESS.2025.3626145,

Pirmoradi, P., Suiker, A.S. and Poorsolhjouy, P., *Multi-scale constitutive model for fiber-reinforced concrete with FEM analyses of structural failure*, Engineering Fracture Mechanics, **323**, (no pages found) (2025). doi:10.1016/j.engfracmech.2025.111166,

[2](1): University; (2): NWO etc.; (3): Industry, TNO, EC-funds, etc.

[3]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

[4]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

[5]Research input for PD per year: 0.8 FTE. The PD research input is only to be included until 2 years after the appointment of the PD researcher.

Poorsolhjouy, P., Mews, K.S. and Misra, A., *Rock Failure Characteristics Evaluated Under True Triaxial Loading from Micro-mechanical Viewpoint*, Rock Mechanics and Rock Engineering, **58(5)**, pp. 5653-5672 (2025). doi:10.1007/s00603-025-04396-w,

Books and book chapters

Pereverdieva, K., Deutz, A., Ezendam, T., Bäck, T., Hofmeyer, H. and Emmerich, M., *Comparative Analysis of Indicators for Multi-objective Diversity Optimization*, Lecture Notes in Computer Science, **15513 LNCS**, pp. 58-71 (2025). doi:10.1007/978-981-96-3538-2_5,

Refereed proceedings

Ezendam, T., van Den Hoeven, Q., Hofmeyer, H. and Aarts, M., *Building Spatial Design Simulation and Optimisation with Structural and Daylight Objectives*, EG-ICE 2025: AI-Driven Collaboration for Sustainable and Resilient Built Environments Conference Proceedings, 32nd EG-ICE International Workshop on Intelligent Computing in Engineering, no volume, (no pages found) (2025). doi:10.17868/strath.00093239,

Saeed, E.S., Benedetti, M., Niglio, O., Giuliani, G., Bosco, E. and Graziotti, F., *NON-DESTRUCTIVE DIAGNOSTICS OF TIMBER ALTARPIECES: SOUND-INDUCED LASER VIBROMETRY FOR EARLY DETECTION OF DELAMINATION*, COMPDYN Proceedings, no volume, pp. 276-290 (2025). doi:10.7712/120125.12408.24966,

7. Eindhoven University of Technology – Mechanical Engineering

1. Senior academic staff

Energy Technology and Fluid Dynamics		
prof.dr.ir. E.H. van Brummelen	Full professor	0.20
P.S. Grassia	Associate professor	0.20
dr.ir. C.V. Verhoosel	Associate professor	0.40
dr. A. Luna Triguero	Assistant professor	0.20
dr.ir. M.R.A. Abdelmalik	Assistant professor	0.20
Mechanics of Materials		
prof.dr.ir. M.G.D. Geers	Full professor	0.40
dr.ir. J.P.M. Hoefnagels	Associate professor	0.40
dr.ir. O. van der Sluis	Associate professor	0.20
dr.ir. V.G. Kouznetsova	Associate professor	0.40
dr.ir. R.H.J. Peerlings	Associate professor	0.40
dr.ir. J.J.C. Remmers	Associate professor	0.40
dr.ir. J.A.W. van Dommelen	Associate professor	0.40
dr.ir. Rokos	Assistant professor	0.40
prof.dr. T.M. Magrini	Assistant professor	0.40
dr. Lei	Assistant professor	0.40
dr.ir. D. Giuntini	Assistant professor	0.40
Dynamics and Control		
prof.dr.ir. I. Lopez Arteaga	Full professor	0.20
prof.dr.ir. N. van de Wouw	Full professor	0.20
dr.ir. I.J.M. Besselink	Associate professor	0.40
dr. S.R. Eugster	Associate professor	0.20
dr.ir. R.H.B. Fey	Associate professor	0.40
dr.ir. A. Pogromsky	Associate professor	0.40
dr. C. Murguia	Assistant professor	0.10
dr.ir. A.A. Lefeber	Assistant professor	0.40
dr.ing. I. Cortes Garcia	Assistant professor	0.20
M.F. Shakib	Assistant professor	0.40
dr. M.S.T. Chong	Assistant professor	0.40
dr. C.M.M. Bourquard	Assistant professor	0.40
Microsystems		
prof.dr.ir. J.M.J. den Toonder	Full professor	0.40
dr.ir. Y.B. van de Burgt	Associate professor	0.40
Robotics		
dr.ir. A. Saccon	Assistant professor	0.40
dr.ir. J. Legrand	Assistant professor	0.40
dr.ir. I.A. Kuling	Assistant professor	0.40
	Total FTE[1]:	11.10

2. Running PhD-projects in 2025 related to research school EM

Energy Technology and Fluid Dynamics

[1]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

B.W.T. Gieling	(PhD 2)	Inferring collision kernels for the Boltzmann equation using Machine Learning techniques	2024-08-15 – present
C.B. Bozdoğan	(PhD 2)	Modeling and Simulation of Photopolymerization in Printing Processes	2024-06-03 – present
F.-.H. Ou	(PhD 1)	Modelling the Evolution of Bubble Clusters Driven Along Confined Channels	2025-11-01 – present
H.A. Melchers	(PhD 1)	Neural Green's Operators (NGO) as Surrogates for Parametric Solutions of Partial Differential Equations (PDEs): application to first-principle models for magnetic confinement fusion energy systems	2023-03-01 – present
M.M. Hodzelmans	(PhD 2)	SHAwave	2024-01-11 – present
R.K. Sharma	(PhD 2)	Implementation and Analysis of Boundary conditions for the Boltzmann equation	2023-10-23 – present
R. Lima de Souza e Silva	(PhD 1)	Bayesian uncertainty quantification of constitutive laws for engineering systems	2023-08-30 – present
M.S. Rezaie	(PhD 1)	Hydrogen Storage in Porous Materials for Energy Applications using Molecular Simulations	2021-09-01 – present
Mechanics of Materials			
A.F. Kuloglu	(PhD 3)	Simulation methodologies for metamaterial integration at system level	2024-10-14 – present
A.C.A.M. Timmermans	(PhD 1)	Experimental and numerical analysis of the sintering behaviour of multi-layer ceramic membranes	2024-09-09 – present
A. Srivastava	(PhD 2)	Crack Free High Accuracy Laser Powder Fusion of Tungsten	2025-09-01 – present
B.J. Verhaegh	(PhD 3)	Experimental research into second-phase particles governing the ultimate properties of advanced high-strength green steels	2025-06-01 – present
C.A. Rojas Vega	(PhD 1)	Fundamental Fluid Dynamics Challenges in Inkjet Printing – Liquid-paper interaction and paper swelling	2023-02-01 – present
C.J.A. Mornout	(PhD 3)	Improve Bendability of Ultra-High Strength AR- and S-Grades	2023-09-15 – present

C.B. Florencio Gomes	(PhD 3)	Design and modelling techniques for metamaterials based on emergent nonlinear phenomena	2024-09-02 – present
C.P. Heitz	(PhD 2)	Design, manufacturing and testing of liquid metal heat shielding concepts	2025-09-01 – present
E.L. Luitjens	(PhD 1)	Bioinspired Composites: Manufacturing and Multiscale Characterization	2025-02-10 – present
E.C. de Cazenove	(PhD 3)	Irradiation damage and corrosion behavior of Al alloys used in research reactors	2025-03-01 – present
E.K. Uzun	(PhD 3)	Advanced Computational Modeling of Bonding and Debonding Processes for High-precision Equipment.	2025-09-15 – present
F. Hendriks	(PhD 1)	Hybrid Machine Learning and Physics based multiscale models for smart materials	2021-11-08 – present
K. Karaca	(PhD 3)	Towards hybrid model formulations: data-driven solutions exploiting constitutive equations	2022-10-01 – present
K.A. van Akkerveken	(PhD 2)	Failure mechanisms in electromagnetic actuators	2024-01-01 – present
L.D. Dodsworth	(PhD 1)	Bridging synthetic RVE data to micromechanical tests for efficient data-coupled models	2023-05-01 – present
M. Aarab	(PhD 2)	Additive Manufacturing for Electronic Packaging	2023-12-01 – present
M.F.L. Cooper	(PhD 3)	Understanding fatigue damage for re-use products and components	2025-10-15 – present
M.A. Akhtar	(PhD 1)	Assembling nano/microstructured ceramic-based composites into complex shapes	2021-05-01 – present
S.N.R. Mudunuru	(PhD 2)	Bulk performance prediction of polymer composites	2022-07-01 – present
N.M. Sanchez Martinez	(PhD 3)	Efficient tools for analysis of hybrid Additive Manufacturing processes	2021-08-12 – present
P.J. van der Loos	(PhD 3)	Particles on the Edge (PLEDGE)	2025-05-15 – present
R.S. Schmeitz	(PhD 1)	Compute-Train-Learn 3D Printing	2023-11-01 – present
S.S. Acar	(PhD 3)	Fatigue damage of re-used products and components – numerical microstructural modelling	2025-12-01 – present

S.T. Torres Olivares	(PhD 3)	DEPMAT: Data Enhanced Physical models to reduce Materials use	2024-01-01 – present
T.S. Feehilly	(PhD 1)	Modelling and multiscale design of active metemate-rial	2023-03-01 – present
A.A.B. IJzerman	(PhD 3)	Circular Photovoltaics	2024-01-10 – present
U.S. Malik	(PhD 3)	METRAMAT	2024-10-14 – present
Dynamics and Control			
A. Habboush	(PhD 3)	Learning in Motion (WP3): Hybrid physics-driven and data-driven Digital Twin-ning for control of web and handling in printing sys-tems.	2023-09-01 – present
A. Subrahamanian Moosath	(PhD 3)	Hybrid and modular dy-namic modeling of complex high-tech systems	2024-06-01 – present
D.M. Meroni	(PhD 1)	Learning and analysis of coupled dynamical systems of Differential Algebraic Equations	2025-05-05 – present
D. Passato	(PhD 2)	DYNAF	2021-07-01 – present
D.W.T. Alferink	(PhD 3)	Motion control of stages with dynamic links, a physics-guided approach	2023-03-20 – present
J.G. Hendrikx	(PhD 3)	Control for nanotube based profiling in AFM	2024-04-15 – present
K. Chen	(PhD 1)	Dynamic modeling and analysis of drilling systems	2022-09-01 – present
M.H. Herrmann	(PhD 1)	Total Lagrangian rod finite element formulation with non-smooth frictional con-tact	2024-09-01 – present
P. Mitterbach	(PhD 1)	Sectorplan	2022-01-10 – present
R.E.W.L. Thijssen	(PhD 3)	Design and modelling of complex damped intercon-nected systems.	2024-10-01 – present
V. Chaudhary	(PhD 3)	Atomic Force Microscopy: Simulation and Modeling	2024-10-08 – present
Z. Wang	(PhD 1)	PhD on designing a sensor network and thermal digital twin of an office building	2024-08-13 – present
Robotics			
B.W.B. Proper	(PhD 1)	ACD call	2022-05-09 – present
K.D. Kommuri	(PhD 1)	Smart materials in Haptic Interaction	2021-01-07 – present
L.C. van Laake	(PhD 3)	AMOLF	2021-11-15 – present
R.Q.M. de Queiroz Mendes	(PhD 1)	EAISI EMDAIR project I.Touch2See	2022-05-01 – present
S.T. Weerathunge	(PhD 1)	SMEAR-Soft Material Ex-ploring Autonomous Robot	2023-04-01 – present

3. Postdocs

Mechanics of Materials

B.W. Werner	(PD 3)	Predicting fracture in 3D printed concrete beam lattice systems with the QuasiContinuum method for computational efficiency
J. Liu	(PD 3)	Additive manufacturing of polymer-derived ceramics with multiscale architectures
S.R. Sikundalapuram Ramesh	(PD 2)	Dynamic metamaterials breaking through subwavelength application limits
V. Rezazadeh	(PD 3)	Unraveling air entrapment during polymer thin film lamination
Z. Chang	(PD 1)	Numerical design and experimental investigation on magnetic metamaterials

4. Dissertations

Energy Technology and Fluid Dynamics

A.A.B. Aissa Berraies, *Numerical Methods for Fluid-Structure Interaction in a Pilot-Operated Valve*, 2025-09-03. Supervisors: E.H. van Brummelen, F. Auricchio.

R. Willems, *Isogeometric patient-specific cardiac analysis of ventricular tachycardia.* , 2025-02-14. Supervisors: Dr. Clemens Verhoosel, Dr. Olaf van der Sluis.

Mechanics of Materials

B.H.H.A. Cordewener, *Sintered conductive materials under mechanical loading: Numerical insights into electro-mechanical performance and failure*, 2025-05-06. Supervisors: J. C. Remmers, M.G.D. Geers.

C. Yan, *Mechanical behavior of ceramic-organic supercrystalline nanocomposites*, 2025-07-02. Supervisors: D. Giuntini, M.G.D. Geers.

N. Dave, *Multiscale modelling of dimensional stability and through-thickness liquid transport in paper sheets*, 2025-05-12. Supervisors: M.G.D. Geers, T.J. Massart, R.H.J. Peerlings.

R.L.C. Liupekevicius Carnielli, *Multiscale modeling of wave propagation in porous media and metamaterials*, 2025-04-01. Supervisors: V. G. Kouznetsova, M.G.D. Geers, J.A.W. van Dommelen.

T. Lenders, *Micromechanical modelling of the rate- and temperature-dependent behaviour of unidirectional carbon fiber-reinforced polyvinylidene fluoride*, 2025-02-04. Supervisors: J.C. Remmers, M.G.D. Geers, L.E. Govaert.

X. Kuci, *Modeling and design techniques for negative reflection in locally resonant acoustic metamaterials*, 2025-03-12. Supervisors: V.G. Kouznetsova, M.G.D. Geers.

Dynamics and Control

B.M. Kessels, *AI-based Model Updating for Nonlinear Dynamical Systems*, 2025-02-06. Supervisors: van de Wouw, Nathan, Promotor Fey, Rob H.B., Promotor.

D. Passato, *Wave-Based Methods for High Order Network Modelling and Analysis of Thermo-Acousto-Elastic Systems*, 2025-12-03. Supervisors: Prof. dr. ir. I. Lopez Arteaga, Dr. D. Beli.

L. Poort, *Model Order Reduction of Interconnected Dynamical Systems: Efficient Preservation of Accuracy, Modularity and Stability*, 2025-02-18. Supervisors: van de Wouw, Nathan, Promotor Fey, Rob H.B., Promotor Besselink, B., Co-Promotor.

5. Overview of research input and output Mechanical Engineering related to EM, 2025

Input

	Sources of financing[2]			Total	
	1	2	3	#	FTE
Senior academic staff[3]	33	0	0	33	11.1
PhD[4]	21	10	21	52	41.6
Postdoc[5]	1	1	3	5	4.0
Total	55	11	24	90	56.7

Output

	Total
Scientific publications: refereed journals	111
Scientific publications: books, chapters in book	4
Scientific publications: refereed proceedings	36
PhD theses	11

6. Bibliography

Journal articles

Aissa-Berraies, A., Auricchio, F.A., van Zwieten, G.J. and van Brummelen, E.H., *On the Robustness of Dirichlet–Neumann Coupling Schemes for Fluid-Structure-Interaction Problems With Nearly-Closed Fluid Domains*, International Journal for Numerical Methods in Engineering, **126(18)**, (no pages found) (2025). doi:10.1002/nme.70139,

Aissa-Berraies, A., van Brummelen, E.H. and Auricchio, F., *Numerical investigation of fluid–structure interaction in a pilot-operated microfluidic valve*, Journal of Fluids and Structures, **132**, (no pages found) (2025). doi:10.1016/j.jfluidstructs.2024.104226,

[2](1): University; (2): NWO etc.; (3): Industry, TNO, EC-funds, etc.

[3]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

[4]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

[5]Research input for PD per year: 0.8 FTE. The PD research input is only to be included until 2 years after the appointment of the PD researcher.

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8. University of Twente – Engineering Technology

1. Senior academic staff

Nonlinear Solid Mechanics		
prof.dr.ir. A.H. van den Boogaard	Full professor	0.40
dr.ir. E.S. Perdahcioglu	Associate professor	0.40
dr. C. Soyarslan	Associate professor	0.20
dr. A. Cometa	Assistant professor	0.32
dr.ir. J. Havinga	Assistant professor	0.32
dr. J. Hazrati Maragalou	Assistant professor	0.40
Applied Mechanics and Data Analysis		
prof.dr.-ing. B. Rosic	Full professor	0.40
A. Berkhoff	Associate professor	0.40
M.H.M. Ellenbroek	Associate professor (visiting)	0.00
dr. A.R. Rege	Assistant professor	0.40
A. Chatterjee	Assistant professor	0.40
dr. A. Stanic	Assistant professor	0.40
dr.ir. J.P. Schilder	Assistant professor	0.40
dr. M.I. Abdul Rasheed	Assistant professor	0.40
Dynamics Based Maintenance		
prof.dr.ir. T. Tinga	Full professor	0.06
dr.ir. R. Loendersloot	Associate professor	0.40
dr.ir. A.A. Meghoe	Assistant professor	0.40
Production Technology		
L.E. Govaert	Full professor	0.40
prof.dr.ir. R. Akkerman	Full professor	0.40
dr.ir. T.C. Bor	Associate professor	0.40
dr.ir. W.J.B. Grouve	Assistant professor	0.40
dr.ir. L.L. Warnet	Assistant professor	0.40
T.H. Hoksbergen	Assistant professor	0.40
M. Luckabauer	Assistant professor	0.40
Multi-scale Mechanics		
prof.dr. A.R. Thornton	Full professor	0.10
prof.dr.ir. H. Askes	Full professor	0.20
prof.dr. S. Luding	Full professor	0.10
dr. T. Weinhart	Associate professor	0.10
I. Ostanin	Assistant professor	0.10
Soil MicroMechanics		
dr. V. Magnanimo	Associate professor	0.40
dr. H. Cheng	Assistant professor	0.40
Computational Design of Structural Materials		
prof.dr.ir. I.M. Gitman	Full professor	0.40
dr. F.L. Liu	Assistant professor	0.40
Surface Technology and Tribology		
prof.dr.ir. M.B. de Rooij	Full professor	0.40
dr. T. Mishra	Assistant professor	0.40
dr.-ing. N.F. Bader	Assistant professor	0.40
dr. J.A. Osara	Assistant professor	0.40
dr. J. Monfared	Assistant professor	0.40
	Total FTE[1]:	12.70

[1]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are

2. Running PhD-projects in 2025 related to research school EM

Nonlinear Solid Mechanics

A. Fallahnejad	(PhD 2)	Physically consistent data-driven constitutive models by machine learning	2023-06-01 – present
A.H. Hashemzadeh	(PhD 3)	Data driven modeling of lateral flow in the rolling of steel strip	2023-07-15 – present
A.R. Ray	(PhD 3)	A Micro-mechanical Model for Cutting and Electromagnetic Behavior Analysis of Electric Steel	2024-06-01 – present
B. Jamshidi	(PhD 2)	Inline probabilistic state estimation and model correction	2024-01-06 – present
F.M. Munzone	(PhD 2)	Automated Model Updating of Digital Twins	2022-09-01 – present
G. Dhungana	(PhD 3)	Optimal design and manufacturing methodology of electrolyzer bi-polar plates (Opt-BPP)	2025-05-01 – present
M. Ruggia	(PhD 2)	Adaptive and Responsive Morphing Surfaces for Green Aviation Using Shape Memory Alloys (ARGUS)	2025-06-01 – present
M.M. Maarij	(PhD 3)	Design and development of Roboforming demonstrator to perform double-sided Robot incremental sheet forming (D-RISF)	2024-10-01 – present
R.C. Bocan	(PhD 3)	NGF GGS - All - Processing-microstructure modeling - forming	2025-10-15 – present
S.A. Nchimbi	(PhD 1)	Advancing FEM in non-linear solid mechanics using machine learning	2024-11-15 – present
S. Rathore	(PhD 3)	Failure analysis in wall ironing of cans and batteries	2022-02-01 – present
S. Younas	(PhD 2)	Inline Hybrid Modelling in Cold Rolling and Forming	2023-12-01 – present
T.P. Posthumus	(PhD 2)	GGS: control of metal forming processes	2024-12-01 – present
V. Blümer	(PhD 1)	Computational Modelling in the Determination of Structure-Property Relation of Additively Manufactured Products	2022-09-01 – present
Z.W. Wang	(PhD 3)	Improved Temper Roll-Force Prediction Through Microstructural Modelling	2025-11-01 – present

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counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

J. van Tiggelen	(PhD 1)	Forced vibrations of system assemblies: An unsolved challenge	2023-01-01 – present
J.C. Schönthaler	(PhD 3)	Failure criteria and residual life analysis of composite structures subjected to vibration fatigue	2023-03-01 – present
K.L. Voorthuizen	(PhD 1)	Additive manufacturing of concrete using multi-robots	2022-01-15 – present
M.M. Fernhout	(PhD 2)	Battery thermal management using physics-informed machine learning	2023-11-01 – present
M.W. Berghuis	(PhD 1)	Real time digital twinning of soft robotics octopus like hand	2021-06-01 – present
R.S. Sharma	(PhD 1)	Multiscale modelling of rubber - silica aerogel composites	2024-12-01 – present
T. Gödde	(PhD 3)	INNOVATE project	2022-03-10 – present
W.J. Schuttert	(PhD 2)	Robust process control for fusion bonding of thermoplastic composites	2023-05-01 – present
Dynamics Based Maintenance			
E.E. Rouwhorst	(PhD 2)	Applying nonlinear acoustics for detection and assessment of PVC water mains	2023-10-10 – present
L.J. Arellano Ortega	(PhD 2)	AmmoniaDrive	2023-09-01 – present
N. Ribeiro Marinho	(PhD 2)	PrimaVera (Predictive maintenance for Very effective asset management)	2022-01-01 – present
S. Maleki	(PhD 3)	Inspection and Maintenance Methodologies for Rail Defects	2025-10-15 – present
S.B. Bruinsma	(PhD 3)	Machine Learning in Condition Based Maintenance	2021-02-01 – present
Production Technology			
A.A. akiki	(PhD 2)	Predictive Modelling of Defects in Thermoplastic Composites	2025-04-01 – present
D.B.L. Ladomerszki	(PhD 1)	LiT-STC Press forming:bending	2025-11-03 – present
E.O.C. Chukwuemeka	(PhD 3)	Compression moulding simulations of recycled discontinuous fibre-reinforced thermoplastics	2025-03-15 – present
F.F. Visser	(PhD 3)	Optimised fibre and matrix treatment	2022-10-03 – present
G. Bieleman	(PhD 2)	ENLIGHTEN-Enabling Integrated Lightweight Structures In High Volumes	2022-07-01 – present
H. Subramani Palanisamy	(PhD 1)	Fraunhofer Innovation Platform at the University of Twente	2021-04-15 – present

J.S. Simon	(PhD 3)	Improvement of leading edge protection systems for wind turbine blades	2023-02-01 – present
M. Gurian	(PhD 3)	Residual stresses in fusion-bonded thermoplastic composites	2022-04-01 – present
M.R. Gongati	(PhD 3)	Residual Stress Development during the fusion bonding of thermoplastic composites.	2023-08-01 – present
M.L. Puga	(PhD 2)	Conduction Welding of Thermoplastic Composites	2025-01-01 – present
M.M. Bos	(PhD 1)	Simulation of hot gas welding of thermoplastic composite T-joints	2024-09-09 – present
M. Azizian	(PhD 1)	Out-of-Autoclave Consolidation using Induction Heated Tooling	2024-07-01 – present
P.M.T. Nguyen	(PhD 3)	Exposure of thermoplastic composites to elevated temperatures	2025-03-01 – present
S. Bentalib	(PhD 2)	ENLIGHTEN	2022-04-01 – present
S. Sayyad Rezaeinejad	(PhD 1)	Solid-state additive manufacturing of high-strength aluminum alloys through FSEAM	2022-07-01 – present
T.J. Asijee	(PhD 3)	Laser Assisted Fiber Placement with In-Situ Consolidation	2021-10-01 – present
Multi-scale Mechanics			
M. Winkelmann	(PhD 3)	Fundamental development of structure- and rotation-related coarse graining for micro-polar continuum theories	2021-09-01 – present
M. Omidi Mamaghani	(PhD 2)	Modeling of smart additive-manufacturing processes for high-performance concrete	2025-02-15 – present
R. Pal	(PhD 3)	Physical properties of DRI REF process materials	2025-07-22 – present
S. Mahdavy	(PhD 3)	Design of a digital framework for upscaled particle calibration with powder characterization techniques	2024-01-09 – present
Soil MicroMechanics			
G.K. Mishra	(PhD 3)	Understanding the influence of grain morphology and mesostructure on the initiation and runout of submarine landslides	2024-10-01 – present
R. Lubbe	(PhD 1)	Continuum–DEM modelling of fluid–solid transition in weakly compacted systems of polydisperse particles of varying shapes	2022-01-01 – present

R. Saghafian Larijani	(PhD 3)	Meso-scale description of wet powders for industrial scale modelling	2021-09-01 – present
S.J. Joseph	(PhD 1)	Noise and Vibration in wet soil: Strategies for smart mitigation measures	2021-07-01 – present
Computational Design of Structural Materials			
E. Karaseva	(PhD 1)	Multiscale analysis of polymer composites using multigrid method	2021-11-01 – present
N.N. Nazemzadeh	(PhD 1)	Modelling of Recycled Fibre Reinforced Polymer Composites	2022-07-01 – present
Surface Technology and Tribology			
A. Adelinia	(PhD 1)	Interface Optimization in Metal-Thermoplastic Hybrid Joints	2021-08-01 – present
F. Jalalimoghadas	(PhD 3)	Multi scale modeling of friction in aluminum sheet forming	2021-11-01 – present
K.K. Shrestha	(PhD 3)	Roughness change in lubricated cam follower contact	2023-12-01 – present
M. Jaran	(PhD 2)	Scaling Friction from Single Grain to Aggregate Grain (fault-gouge) Contacts	2022-09-15 – present
S.S. Gamaniel	(PhD 1)	Design of a biomimetic tongue for astringency assessment of plant-based proteins	2022-11-28 – present
S. Sharma	(PhD 3)	Degradation and Lubrication mechanism of stern tube seals	2022-06-01 – present
S.A.A. Alfath	(PhD 2)	Micro-mechanics of dynamic friction in a single-grain contact.	2024-09-01 – present
Z. Ranjbar Nouri	(PhD 3)	Hard chrome plating in cold rolling	2021-11-01 – present

3. Postdocs

Nonlinear Solid Mechanics

H. Aghajani Derazkola	(PD 3)	A micro-mechanical model for roughness transfer in cold rolling of steel strips

Multi-scale Mechanics

O.A.H. Allan	(PD 3)	MINT

Surface Technology and Tribology

M. Gargourimotlagh	(PD 3)	Multi-scale friction modeling in the mixed lubrication regime with application to aluminum forming process

4. Dissertations

Nonlinear Solid Mechanics

M.M.K. Masoumi Khalilabad, *Investigating Edge Cracking in Dual-Phase Steels: Testing, Mechanism, and Modeling*, 2025-09-15. Supervisors: T. van den Boogaard, E.S. Perdahcioglu, E.H. Atzema.

Dynamics Based Maintenance

L.S. Keizers, *Hybrid prognostics for predictive maintenance: Combining physics-based and data-driven methods to overcome prognostic challenges*, 2025-05-01. Supervisors: T. Tinga, R. Loendersloot.

Production Technology

D. Brands, *Forming simulations for unidirectional thermoplastic composites: Improving in-plane shear characterization and modeling*, 2025-01-31. Supervisors: R. Akkerman, W.J.B Grouve.

Y.M. Buser, *Predicting induction heating of tape-based thermoplastic composites: The role of orthotropic electrical conductivity*, 2025-02-25. Supervisors: R. Akkerman, W.J.B. Grouve.

Surface Technology and Tribology

M. Gargourimotlagh, *A Modeling Framework for Rolling Contract Fatigue Analysis in Rough Rolling Elements*, 2025-10-28. Supervisors: M.B. de Rooij D.T.A. Matthews.

S.S. Gamaniel, *Tribo-mechanical stability of mucous boundary layers in biofidelic contacts*, 2025-12-12. Supervisors: E. van der Heide, D.T.A. Matthews.

5. Overview of research input and output Engineering Technology related to EM, 2025

Input

	Sources of financing[2]			Total	
	1	2	3	#	FTE
Senior academic staff[3]	38	0	0	38	12.7
PhD[4]	17	18	27	62	49.6
Postdoc[5]	0	0	3	3	2.4
Total	55	18	30	103	64.7

Output

	Total
Scientific publications: refereed journals	71
Scientific publications: books, chapters in book	1
Scientific publications: refereed proceedings	18
PhD theses	6

[2](1): University; (2): NWO etc.; (3): Industry, TNO, EC-funds, etc.

[3]The standard EM input for staff members is 0.4 FTE. Researchers that are active in multiple graduate schools are counted for 50% in the EM input (0.2 FTE). The input is proportional with the appointment of the personnel at the affiliated group. The output of guest researchers, as indicated in the input table, is not included in the EM output.

[4]Research input for PhD per year: 0.8 FTE. The PhD research input is only to be included until 4 years after the appointment of the PhD candidate.

[5]Research input for PD per year: 0.8 FTE. The PD research input is only to be included until 2 years after the appointment of the PD researcher.

6. Bibliography

Journal articles

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Allan, O., Mishra, T., Meijer, R.J. and Rooij, M.d., *Micro-CT analysis of geometrical distribution of filaments in double-twisted three-strand ropes: Comparison with analytical model*, Journal of Industrial Textiles, **55**, (no pages found) (2025). doi:10.1177/15280837251333116,

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Brands, D., Haanappel, S.P., Grouve, W.J., Wijskamp, S. and Akkerman, R., *Critical evaluation of torsion rheometry to characterize the anisotropic intraply shear resistance of unidirectional thermoplastic composites in melt*, Composites Part A: Applied Science and Manufacturing, **190**, (no pages found) (2025). doi:10.1016/j.compositesa.2024.108661,

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