

Doctoral Orientation Days – Electrical Engineering

Monday 1 December 2025 (in Maarintie 8, room AS4)

- **14.30-14.40 Dean Jussi Ryyränen**
- **14.40-14.50 Chair of the Doctoral Programme Committee Vesa Välimäki**
- **14.50-15.20 Planning Officer Emma Holmlund**
- **15.20-15.25 Doctoral student Maksim Sitnikov**
- **15.25-15.30 Change to the ICT laboratory**
- **15.30-16.00 Visit to the ICT laboratory**



Electrifying the future

Aalto University School of Electrical Engineering

**High quality research and
education with impact**

#1

in Finland
(QS World University
Rankings 2024)

#109

globally
(QS World University Rankings 2024)

A!

#47

**most international
university in the world**
(THE Most International
Universities Ranking 2023)

²
#21

**in university-industry
collaboration globally**
(Leiden Ranking Industry
Collaboration 2023)



Key figures

~ 250 B.Sc. Degrees
~ 250 M.Sc. Degrees
40-60 D.Sc. Degrees

~ 2100 full time students
~ 230 doctoral students
~ 700 staff
~ 60 professors

~ 25M€ external funding
including ~10M€ from
non-academic partners

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Aalto University

School of Electrical Engineering

We shape a better future by:

- Cutting edge **health technology**
- More sustainable and intelligent **energy solutions**
- Efficient and reliable **wireless communication**
- Advances in **space technology**
- **Human-centric information technology** – speech, audio, and interfaces
- **Automation and robotics**
- Basis for new innovations with **high-class basic research**

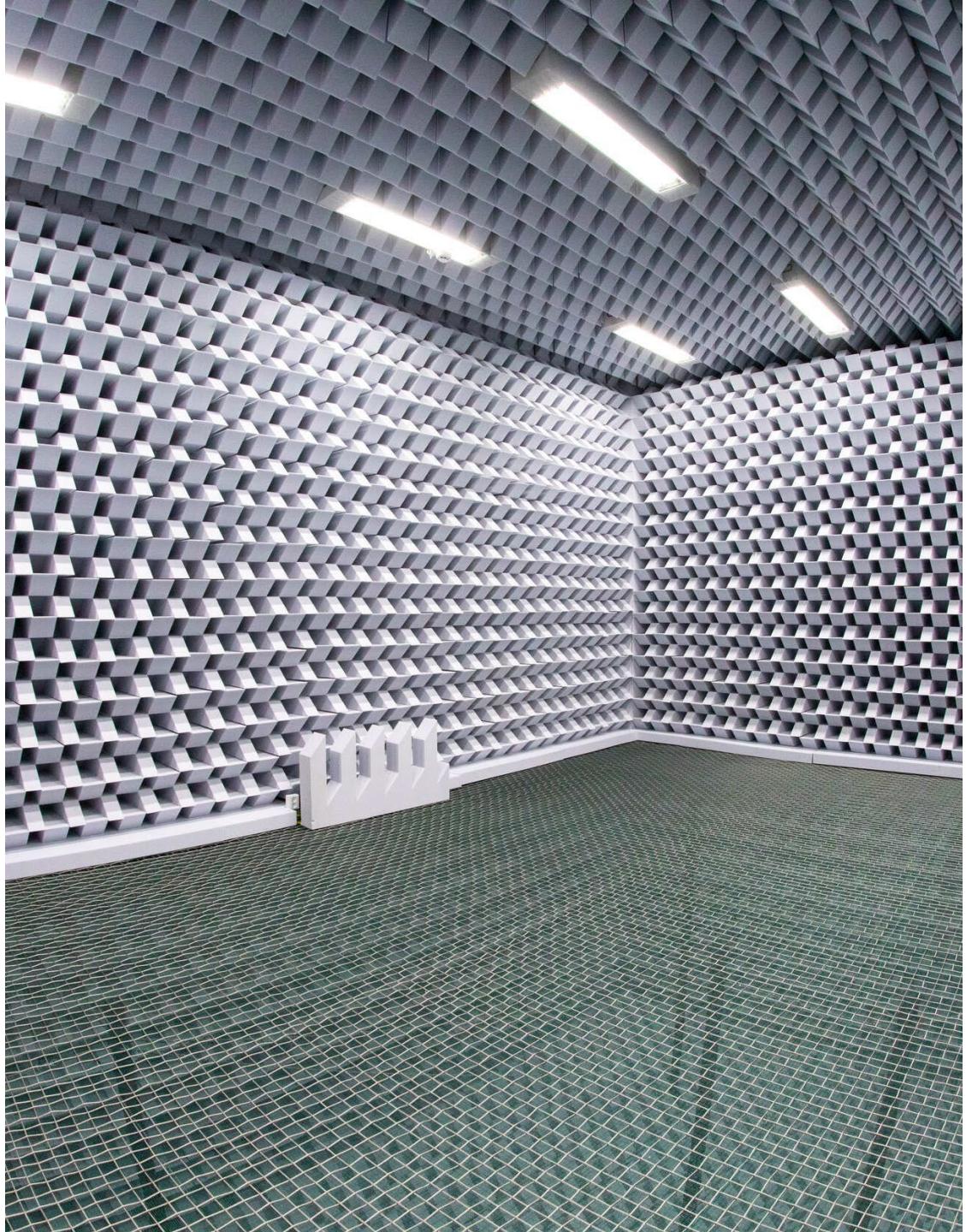
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Aalto ELEC Infrastructures

- Aalto Nanofab
- Metsähovi Radio Observatory
- Microelectronics, Digital and Autonomous Systems (MIDAS)
- Electrical Power and Energy (EPE)
- Human Centric Electrical Engineering (HUCE)

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What is important?

What is your dream, where do you aim to be after 4 years?



Be enthusiastic, network with colleagues, balance worklife and free time



Be open-minded and venturesome



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A?

Aalto University
School of Electrical
Engineering

A!

—
**Kiitos
aalto.fi**

Welcome to the School of Electrical Engineering

Prof. Vesa Välimäki

Chairman of the ELEC Doctoral Programme Committee

Vide Dean for Research in ELEC

Professor of audio signal processing

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Engineering



December 1, 2025

Doctoral studies in a nutshell

Doctoral Programme in Electrical Engineering

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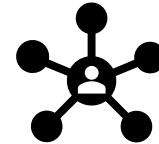
Emma Holmlund

1.12.2025

Welcome to doctoral studies in ELEC!



- Doctoral studies are fun and interesting, but also demanding
- More like a job than studies, compared to BSc and MSc studies
- You will build up a network with contacts in your field.
- Remember to enjoy!
 - Be curious
- Remember to celebrate achievements and take care of your wellbeing!



Division of services in doctoral studies

Doctoral Programme (ELEC)

- Doctoral study right
- Registering individual studies
- Confirming new supervising professor / thesis advisor /other change in study right
- Pre-examination and graduation
- Incentive scholarships

Aalto University

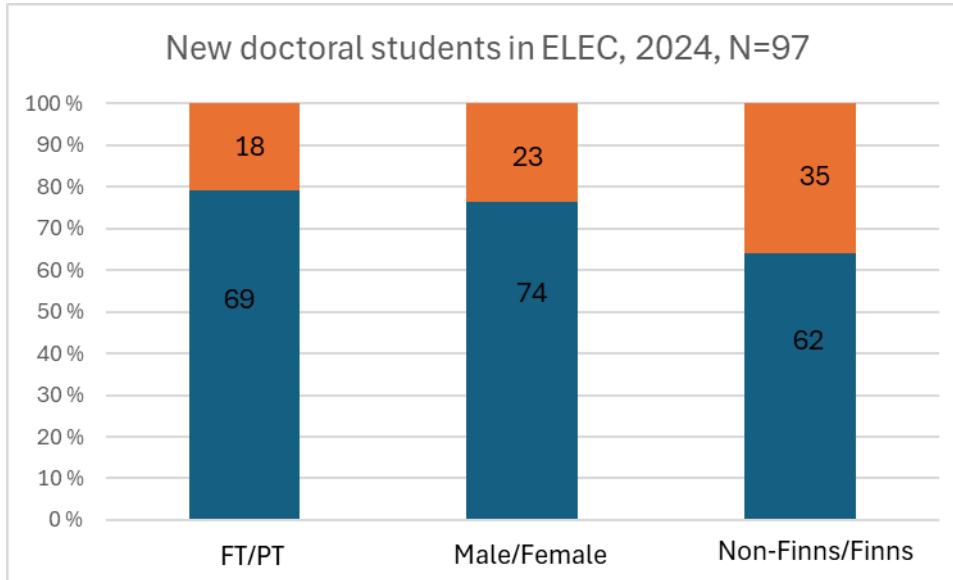
- Pedagogical training
- Research and Innovation Services
- Career services
- Language Centre

Departments (EEA, ELE, DICE)

- Supervision and guidance
- Courses in the research field
- Summer schools, conferences
- Research work
- Work contracts (HR)
- Funding

ELEC Doctoral programme

Doctoral Programme in Electrical Engineering



2024 in numbers:

- 97 new doctoral students
- About 420 active attending doctoral students in ELEC
- 64 doctors (270 total from Aalto)

Administration of ELEC doctoral programme

The Doctoral Programme Committee (DPC) (2023–2025)

Prof. Vesa Välimäki (DICE, chair)

Prof. Simo Särkkä (EEA)

Prof. Matti Lehtonen (EEA)

Prof. Keijo Nikoskinen (ELE)

Prof. Yu Xiao, (DICE)

Doctoral Student Maksim Sitnikov (year 2025)

- Evaluates applications for study right
- Appointing pre-examiners and opponents, deciding on permission for public defence
- Evaluation of theses



Learning Services

Miika Remahl, coordinator

(the early phase of studies)

- Courses, credit plan, studies outside Aalto and credit transfer
- DPSP (doctoral personal study plan)
- Incentive scholarships

Emma Holmlund, planning officer

- Pre-examination process

Suvi Katajamäki, coordinator

(the end phase of studies)

- Changing supervising prof., advisors, etc
- Final confirmation of studies (before pre-examination)
- Permission for public defence to graduation process

<https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-electrical-engineering/contact-information>

The Doctoral Programme Committee (DPC) (2026–2028)

Prof. Vesa Välimäki (DICE, chair)

Prof. Sergiy Vorobyov (DICE)

Prof. Simo Särkkä (EEA)

Prof. Valeriy Vyatkin (EEA)

Prof. Zachary Taylor (ELE)

Doctoral Student Zhenhan Wang (year 2026)

Practicalities

Important to remember

- **Doctoral studies** at Aalto.fi (search: aalto doctoral education hub, or direct link: <https://www.aalto.fi/en/doctoral-education>
 - In the left navigation:
 - Doctoral studies
 - Doctoral research
 - Evaluation and graduation
 - In the left navigation, choose Doctoral programmes/ Electrical Engineering (ELEC): <https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-electrical-engineering>
 - ELEC specific matters



Enrolment EVERY YEAR until graduation:

- **OILI**, <https://oili.csc.fi/?lang=en>



How will we keep you updated with the current issues?

- We will use your aalto-e-mail address
- Your Aalto e-mail has been added to the following e-mail lists:
 - For all doctoral students at Aalto: aalto-doctoral-students@list.aalto.fi
 - For doctoral students in ELEC: doctoralcandidates-elec@list.aalto.fi
- **(Part-time students** can redirect the e-mails to some other address but not employees of Aalto):

<https://www.aalto.fi/en/services/redirecting-emails-outside-of-aalto-university-students-only>

Doctoral Personal Study Plan (DPSP)

Tohtoriopiskelijan henkilökohtainen opintosuunnitelma (T-HOPS)

Doctoral Personal Study Plan (DPSP)

<https://www.aalto.fi/en/doctoral-education/doctoral-personal-study-plan-dpsp>

DPSP consists of the following documents:

- 1. Sisu credit plan, 30 ECTS**
- 2. Research plan**
- 3. Supervision plan**
- 4. Financing plan**
- 5. Career plan**

Uploaded to MyStudies (mystudies.aalto.fi)

**Should be updated when changes occur,
checked two times a year.**

Sisu credit plan (sisu.aalto.fi)

Research field studies

General research studies

Extra curricular studies

Research field studies at ELEC:

Courses or other attainments that support your research

- **Courses organized by the departments**
 - Doctoral level studies (e.g. ELEC-L1234 D)

Postgraduate Course in Micro and Nanosciences II V D

ELEC-L3221 10 ects English starts in: Apr 26, 2021

Microwave Engineering II D

ELEC-E4430 5 ects English starts in: Mar 22, 2021

- **Individual study attainments**
 - Summer/winter schools ELEC-L0280
 - Literature (book exam etc.) ELEC-L0260

General Research Studies

- **Planning and follow-up of studies**
 - Introduction to Doctoral Studies, ELEC-L0902 (highly recommended)
 - Midterm review, ELEC-L0950 (from 1.1.2026)
- **Working life skills**
 - **Research Ethics for Doctoral Students, LC-L1000 (compulsory)**
 - writing grant applications, business skills
- **Pedagogical studies**
- **Scientific writing and communication**
 - Courses offered by the Language Centre
 - No language courses, except for 6 ECTS of Finnish or Swedish
- **Individual studies**
 - Teaching at courses ELEC-L0230
 - Guidance of B.Sc. or M.Sc. Theses ELEC-L0220 / ELEC-L0225

The midterm review

- **Compulsory if you have a working contract at Aalto, highly recommended for all doctoral students.**
- **Follow-up of your doctoral studies at 12-20 months after the start of your first working contract.**
- **Presentation on your achievements and plan until graduation**
- **More info at our webpage:**

<https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-electrical-engineering/midterm-review-for-doctoral-students-in-the-school-of-electrical-engineering>



Doctoral thesis

Requirements of doctoral theses at Aalto University



- A doctoral thesis must follow **good scientific practices** and **ethically sustainable principles**
- A doctoral thesis must contain **new scientific findings** in its area of research
- Research methods and new research findings are to be presented clearly and they need to **withstand examination**
- The **student's own contribution** to the research has to be sufficient and clearly stated

<https://www.aalto.fi/en/doctoral-education/doctoral-thesis-at-aalto-university>



Forms of doctoral theses (1/2)

1. Article based thesis

- Consists of **a summary** (30-60 pages) and **publications** or manuscripts submitted for publication
 - journal or conference articles of high quality
 - accepted through a peer-review process
 - **at least one** of the articles have to be published or accepted for publication when submitting the thesis for pre-examination
- **Number of publications required** depends on:
 - the extent, scientific significance and quality of the publications
 - the student's independent contribution
 - recommendation: **3-5 full publications**

<https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-electrical-engineering/thesis>



Forms of doctoral theses (2/2)

2. Monograph

- An independent book (no more than 300 pages), does not contain journal articles
 - a researcher's personal work
 - you can use your own results in articles you may have published. Remember to include citations to the articles

Supervision

Supervisors

- During admission the Doctoral Programme Committee has appointed a supervising professor and at least one thesis advisor for every doctoral student
- If you don't have a separate thesis advisor, your supervising professor has both roles
- Supervision plan – agreement on who does what.

Highlights of the rights and responsibilities - student

Rights of a doctoral student:

- to receive **guidance** on a regular basis
- to **study** in accordance with the doctoral personal study plan (DPSP)

<https://www.aalto.fi/en/doctoral-education/supervision-of-doctoral-studies#2-roles-and-responsibilities>



Responsibilities of a doctoral student:

- to familiarize yourself with the **ethical principles of scientific research** and to act in compliance with the guidelines on good scientific practice.

<https://tenk.fi/en/research-misconduct/responsible-conduct-research-rcr>



- to carry out research **independently** and in a self-directed manner in accordance with the research plan

Responsibilities - supervising professor

- to provide **guidance** in the execution of the research work
- to **guide in publication writing** and to encourage the doctoral student to actively publish the research results
- to **follow up** the progress of the doctoral student on a regular basis
- to ensure that full-time doctoral students are **not burdened excessively** with duties other than doctoral research work

<https://www.aalto.fi/en/doctoral-education/supervision-of-doctoral-studies#2-roles-and-responsibilities>



What if something goes wrong?

- <https://www.aalto.fi/en/doctoral-education/doctoral-student-wellbeing-and-support>
- <https://www.aalto.fi/en/study-at-aalto/support-for-challenges-during-your-doctoral-studies>



If there are problems with guidance:

- **Don't be alone, ask for help!**
- **Talk first with:**
 - your supervising professor and/or thesis advisor
 - If you don't have a separate thesis advisor, ask for one
- **If there are still problems, talk with:**
 - Head of the Department
 - HR of your department
 - us in the doctoral programme
 - An ombudsperson or study psychologist

Scholarships

Incentive scholarships for doctoral students at Aalto University/ELEC



Valid until 31.12.2029: <https://www.aalto.fi/en/doctoral-education/incentive-scholarships-for-doctoral-students>

- 500 euros
 - for the **first two scientific articles** to be included in the doctoral thesis.
- 2000 euros
 - for completing the doctoral degree **within exactly four years of being admitted** to the doctoral programme **OR**
 - for completing the doctoral degree by the end of the calendar year the **doctoral student turns 30**.
- The applications have to be submitted within six months of the fulfillment of the scholarship criteria
- The exact criteria will be updated on the webpage.

Tips

Tips for your doctoral studies



**Be goal-oriented
and committed**

Learn to prioritize
and use your time



**Take
responsibility**

You are responsible
for your doctoral
studies!



**Ask for help and guidance
when you need it**



New PhD student advice - from a fellow doctoral student

Emergency procedures – in addition to 112



AaltoAPUA helpline 050 46 46 462



More information:
<https://www.aalto.fi/en/services/emergency-procedures>

Thank you!

Good luck with your doctoral studies!

Questions:

**emma.holmlund(at)aalto.fi /
suvি.katajamaki(at)aalto.fi /
miika.remahl(at) aalto.fi**

Feedback

On your phone/computer go to:

<https://presemo.aalto.fi/orientationelec>





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Aalto University
School of Electrical
Engineering

About me



- Doctoral Researcher (Ph.D. student)
- Doctoral Thesis - **Design and Analysis of compact high-speed high-power electrical machines** (Aalto University, Computational Electromechanics)
- Master thesis - **Design and finite element analysis of a high-speed synchronous reluctance machine** (Saint-Petersburg Electrotechnical University ‘LETI’, Russia; Advisor – Anouar Belahcen, Aalto University)
- Work experience:
 - **Technical Support Specialist** (Department of Electric Drives), Siemens, 07.2021-04.2022
 - **Lab Assistant for Electrical Machines** (‘LETI’), 11.2019-02.2020

Duties of the student member as a part of the DPC

- Selection of new doctoral students for the Dean
- Appoint pre-examiners, opponents
- Develop the curriculum of doctoral education
- Doctoral thesis award winners for the Dean

Your possible contribution to the work of the DPC

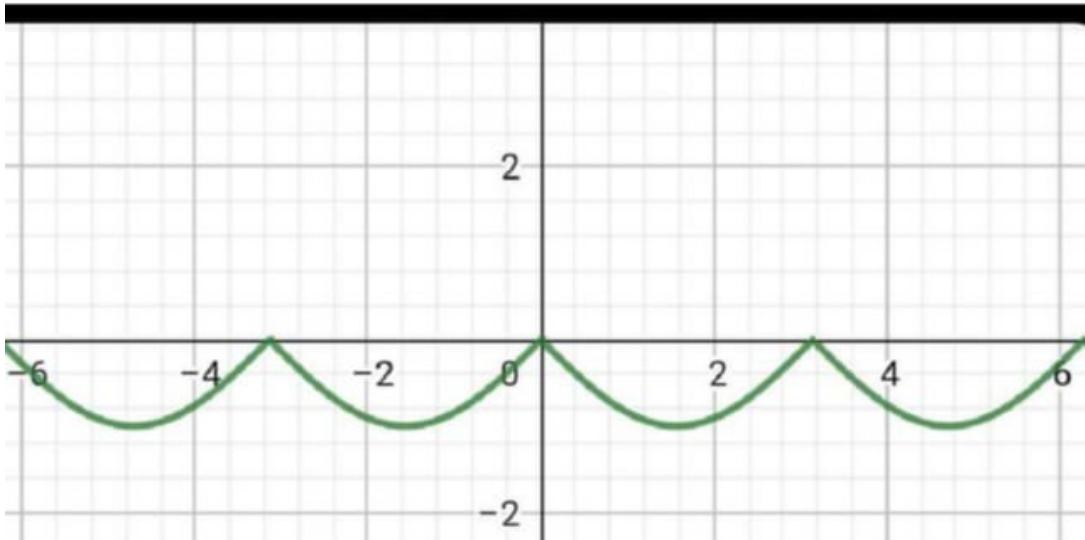
- Welcome to propose new ideas about the curriculum and school development
- Welcome to share our decisions and discuss it
- *Welcome to make your thesis as good as possible*

**"Life is like a sine function.
It has its ups and downs."**

— some random great mathematician

The sine function that determines the ups and downs of my life:

$$y = -|\sin(x)|$$



My contacts

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- Office: 3547

