



OVERVIEW OPEN INTERNSHIPS

Daikin Europe N.V.

Zandvoordestraat 300

8400 Oostende



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Introduction

Daikin (Europe N.V.) (DENV) is a subsidiary of Daikin Industries Limited, a Japanese outstanding company and worldwide the biggest developer, producer and supplier of HVAC-R (heating, ventilation, air conditioning and refrigeration) solutions, including heating pumps and cooling technology.

DENV is Daikin's sales, R&D, and production headquarters for Europe, the Middle East and Africa. The headquarter has Belgian offices in Brussels, Ghent and Ostend, as well as 8 production plants, 24 sales subsidiaries and offices and a whole network of independent distributors and dealers across the EMEA region.

Technology increasingly determines our future and is the engine of our economy. New innovations are drastically changing the way we live, communicate and do business, but also offer opportunities for companies to enter new markets and develop innovative products & business models.

Our **EMEA Development Centre (EDC)** plays a unique role in accelerating decarbonization through research and development of innovative, energy-efficient alternatives to traditional heating solutions, new heat pump technology and solutions for cold chains for domestic & industrial customers.

We are dedicated to support the goals agreed upon during the climate conferences across the world.

The ambitions of the Daikin EMEA Development Centre (EDC) reflect in the construction of a new state of the art EMEA R&D building in Zwijnaarde (Ghent). Three floors are dedicated to future intense collaboration with universities and spin offs since we not only rely on our own internal knowledge and perseverance, but we strongly believe in knowledge sharing to progress. This pillar will become our brand new section within the EDC organization.

We offer

At Daikin you can count on a unique internship, with an international market leader which encourages people to work together and develop. You will work in the European Development Centre (EDC) which is expanding rapidly recent years. During your internship, you will become part of the EDC team which is engaged to make the world a *greener* place by introducing renewable alternatives in our cooling/heating market. You will be supported by a team of enthusiastic engineers.

We caught your interest and you want to apply to one of our internships?

Register here (<https://careers.daikin.eu/denv/job/Oostende-Internship-West/873246101/>)

Follow the instructions and your CV will be automatically transmitted to us.

Maybe see you soon because think about it... Daikin's got the talent!

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Overview of internships

AC & Refrigeration Department

- Natural Refrigerants
- Ventilation

Solution Department

- Simulation
- Plate heat exchanger performance comparison test rack

Electrics & Controls Department

- Competitor analysis
- Indoor unit simulator

Development control Department

- Business / Process improvement
- Data analytics

Compliance & Patent Department

- ElectroMagnetic Compatibility (EMC) testing
- Sustainability
- Patents

Heating Department

- Simulation of heat exchangers
- Correlating frosting data

EDQ - EMEA Development Quality Assurance Department

- Heat Recovery systems for test room energy saving improvements

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AC & Refrigeration department

Department

As EMEA Development Centre (EDC), we develop air-conditioning, heating, refrigeration and ventilation products. As well controls and IOT solutions are developed. These are produced in different factories located within and outside Europe. These products are put on the market through our various Daikin distributors and affiliates within Europe, Middle East and Africa.

Internship Natural Refrigerants

Your role

During your internship within our EMEA Development Centre, you will be involved in the advanced development of the next generation of light commercial air conditioning products

During your internship you will be challenged by the following:

- Study and understand the working of an air conditioning system using natural refrigerants
- Understand the challenges compared to a system using a traditional refrigerant
- Analyse the performance of system driven by a natural refrigerant by detailed study of the thermodynamical performance cycle
- Be actively involved in drafting the validation plan to check the performance by actual testing in our unique laboratories
- Join the actual testing in our laboratories
- Based on the performance analysis propose system/logic improvements to improve the performance

Your profile

- You are currently pursuing studies in Engineering (last year bachelor's or first Master's)
- Knowledge/interest about the working principle of air conditioning products is a must
- You are a person with a strong technical interest
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

Internship Ventilation

Your role

During your internship within our EMEA Development Centre, you will be involved in the advanced development of the next generation of commercial ventilation units

You will be challenged by the following:

- Have the opportunity to work in an international team of driven and passionate engineers
- Get a deep understanding of the technical and legal requirements and how these impact the design of our units
- Drawing up of test plan to assess and improve the performance (energy efficiency, leakage, pressure drop) of the unit

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- Follow up the test plan with the testing department and take care of the daily follow up
- Work with state-of-the-art test equipment
- Discuss your results with the team, make diagnoses, propose countermeasures and implement them during testing
- Cooperate with our prototype shop to realize modifications to our prototypes

Your profile

- You are currently pursuing studies in Engineering (last year bachelor's or first Master's)
- Knowledge about ventilation or IAQ is a plus
- You are a person with a strong technical interest
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

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Solution department

Department

The EMEA Solution Department is part of the EMEA Development Centre. This department supports the product development in the R&D process of new products. During development of a product, many prototypes are made and testing is performed in order to guarantee the quality of the final product. In order to improve the quality, cost and delivery of the final product even further, unit building and testing is gradually being supported and even replaced by Computer Aided Engineering (CAE).

Simulation internship

Your role

As simulation engineer intern you will use your expertise:

- To support the search for increased accuracy of simulations.
- By correlation of tests and system simulation, you map the existing accuracy of predictions. You are invited to prepare test units, coordinate the testing and perform data processing.
- Available simulation models are shared and improved by your expertise.
- In this internship, you are working on the physical and digital track of prototype validations.

Your profile

- You are currently pursuing studies in Engineering (last year bachelor's or first Master's)
- Knowledge about simulation software (CFD, FEA or 1D Multiphysics simulations) is a prerequisite
- You are a person with a strong technical interest
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

Plate heat exchanger performance comparison test rack

Your role

As a leading manufacturer of heat pumps we are constantly on the lookout for the best quality versus cost optimized components. The brazed plate heat exchanger (PHE), responsible for exchanging energy between the refrigerant and water side of our systems, is one of those crucial components. From various PHE manufacturers we often get proposals of their newest technologies that could be of interest for our developments.

Evaluating PHEs carefully is a time-consuming task. Furthermore, to guarantee correct data, comparing technologies from different suppliers cannot be asked to the suppliers themselves. Therefore, to be able to make such comparisons inhouse and not to interfere with running developments we would design and build a parameterizable test machine/heat pump based on an existing platform (for example a ground source heat pump) with a possibility to easily replace the PHE. With this test rack we can then evaluate cooling and heating performance, freezing risks, pressure drop,

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In this internship you apply your knowledge to define the loads, required hardware, measurement equipment to make a robust test rack. Setting up test procedures or executing actual comparison tests in our test rooms is a critical part of your assignment.

Your profile

- You are currently pursuing studies in Engineering (last year bachelor's or first Master's)
- Knowledge/interest about the working principle of air conditioning products is a must
- You are a person with a strong technical interest with hands-on mentality
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

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Electrics & Controls department

Department

The EMEA Electrics and Controls department, located at Tech Lane Ghent Science Park, is one of the fastest growing departments within the EMEA Development Centre of Daikin. This department is responsible for development and improvement of controls: room controls, unit controls, App and cloud controls.

Part of our work involves:

- Embedded software development
- Hardware development
- Cloud and App development

Throughout the development steps we combine “in house” development and strategic cooperation with external partners to enhance our products, keeping them amongst the best in the industry.

Competitor analysis internship

Your role

- Execute specific competitor analysis in the area of residential & Commercial controllers in the field of HVAC. You will use brochures, internet, App stores.... to conduct your market research. The competitor analysis could be in the field of cloud based remote monitoring and maintenance, App functionality, remote controller,
- Make an analysis, summarize and formulate possible future product improvements based on the competitor analysis

Your profile

- You are currently pursuing studies in Engineering, commercial engineer or master in economics /marketing (last year bachelor's or first Master's)
- You are a person with a technical and commercial interest
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

Indoor unit simulator internship

Your role

- Extend further the present indoor unit simulator tool that will be used for internal & external development to verify via simulation the correct function (instead on real indoor unit product). This tool is a software program that enables to test other software that is interacting with our indoor units without a physical product. This enables early testing before a real linked unit is available.
- Get familiar with the existing code base in order to extend the functionality
- Make and execute test plan to prove S/W quality

Your profile

- You are currently pursuing studies in Engineering in computer science (last year bachelor's or first Master's)
- You are a person with a strong technical interest
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

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Development control department

Department

The EMEA Development Control Department is a specific organization within the development centre.

We are monitoring the projects end to end and are involved in different domains:

- Budget and Resource planning, inclusive reporting and monitoring on the progress
- System and tools implementation: Implementing new tools, looking for efficiency improvement projects in way of working, is key to the organisation
- Process and procedure management: we need to monitor and implement process and the right procedures in order to track the development is following the correct steps and passes the necessary Gates during the trajectory
- Project Planning: assure the new development of the projects is correctly introduced into the EMEA DC organisation
- User manual creation: our team of technical (skilled) writers create and make the necessary user manuals (end user and installers) that are attached to our units at the end.
- Training: we assure the colleagues in EDC receive the necessary trainings and onboarding steps when entering our growing organisation
- Secretary and administration: we host the administrative support to the total EMEA Development Centre team.

Business / Process improvement internship

Your role

Internships can be performed related to the business improvement team:

- Assist in internal EDC business improvement projects (process oriented / software tool oriented)
- Support on CAD/BOM activities & improvements.
- Support in Product Lifecycle Management related activities & improvements.

Your profile

- You are engineer pursuing master studies in business engineering, process management or project management.
- You are strongly affiliated with developing technical solutions and have knowledge on system development principals.
- You have an analytical mindset with an interest in systems, planning, processes and IT.
- You have strong project/change management interest and/or skills.
- You are flexible to do multitasking (administrative, operational,...).
- You are communicative and you have good knowledge of English.

Data analytics internship

Your role

Internships can be performed related to the business improvement team:

- Support EDC in collecting, organizing, synthesizing and analysing data.

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- Assist in internal EDC database/tool development & improvements (PowerBI, Azure, VBA coding, ...)
- Draw and generate statistically based reports to maintain the link between operations and management.
- Support business units to deeply understand patterns and figures and draw conclusions in order to feed the organisation learning.

Your profile

- You are a student pursuing master studies in data analytics, Engineering, Business Information systems, operations research.
- You have a critical thinking and data-driven mind set.
- You are flexible to work in a large organisation with multiple data sources.
- You show initiative and enthusiasm to continuously challenge data models and systems.

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Compliance & patent department

Department

Our compliance team supports the business to ensure zero liability pertaining to regulatory compliance, in a timely, reliable and cost-effective manner. They drive our various compliance projects throughout the EMEA region, coordinating and advising our development centres in Belgium, Germany, Turkey and Czech Republic.

They uphold the internal process to ensure all compliance considerations are incorporated in our product categories and are responsible for researching requirements in different fields and more specific disciplines (PED, EMC, safety, environment, ecodesign..).

Additional to this legislation responsibility, the department is holding the management on the patents within the R&D organisation.

ElectroMagnetic Compatibility (EMC) testing internship

Your role

In our new state of the art test lab in the R&D centre in Ghent, we will introduce for the first time in Europe EMC test rooms in our test facilities. The new equipment should be integrated into our systems.

During your internship you will be challenged by the following:

- Make you familiar with the equipment in relation to the standards for which the equipment is required
- Preparing templates for easy generating reports from the measurement in line with the related standards and ISO17025 in order to be an accredited lab
- Where possible create automation scheme for testing

Your profile

- You are currently pursuing studies in Electrical Engineering (last year bachelor's or first Master's)
- You are a person with a strong technical interest
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

Sustainability internship

Your role

In view of the EU Green deal and upcoming environmental legal requirements (like ESPR & digital passport), we need to set up Sustainability and ecoscoring criteria for our products. Ahead of the implementation of measures for our products and the product legal requirements we want to proactively establish the necessary tools & processes to:

- Evaluate the sustainability of our products (as is today)
- Establish tools & processes to measure improvements in sustainability of the products
- Set sustainability targets for new developments in cooperation with the Development teams and follow up the implementation & evaluation criteria
- Prepare for establishing the Digital Product passport of our products
- Follow up the movements in legal requirements on EU level but also national sustainability initiatives and

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- Ensure the implementation to our products by incorporating the requirements in the internal processes

This role is located in the EMEA compliance department of EDC but with a close cooperation with the development groups.

Your profile

- You are currently pursuing studies in Engineering (last year bachelor's or first Master's) with a strong interest focus on environment & sustainability
- You are a person with a strong technical interest
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

Patents internship

Your role

In the domain of the patent management we can offer traineeships in view of:

- Basic knowledge: Understand basic patent laws, at least novelty, inventive step and first to file principle.
- Classification: Classify our competitors' patents classified by technical fields
- Classification: Understand the technologies used in our products, read our patents, and investigate what patents are used in our products.
- Response to office action: Consider how to respond to office actions
- Invention: Understand a new idea we are considering to file, investigate prior art search if the idea is novelty or not.

Your profile

- You are currently pursuing studies in Electromechanical Engineering (last year bachelor's or first Master's)
- You are a person with a strong technical interest
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

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Heating department

Department

As EMEA Development Centre (EDC), we develop air-conditioning, heating, refrigeration and ventilation products. As well controls and IOT solutions are developed. These are produced in different factories located within and outside Europe. These products are put on the market through our various Daikin distributors and affiliates within Europe, Middle East and Africa.

Simulation of heat exchangers internship

Your role

During a development of a heat pump the selection of the air side heat exchanger is very important. For this we have developed a simulation tool (HEXsim) to predict the performance of a heat exchanger. But each simulation model needs to be validated by actual performance and tuned.

The goal of this internship would be to compare HEXsim simulation results to actual measurements. Adjust HEXsim model parameters to get better prediction, identify which parameters are most sensitive.

An in depth understanding of the HEXsim simulation algorithm will be necessary during the start of this internship.

Your profile

- You are currently pursuing studies in Engineering (last year bachelor's or first Master's)
- Knowledge/interest about the working principle of heat pump products is a must
- You are a person with a strong technical interest
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

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Correlating frosting data internship

Your role

An air to water heat pump that works in heating mode has the air side heat exchanger as an evaporator. During the operation of the heat pump, to extract energy from the air, the temperature of the heat exchanger needs to be lower than the ambient temperature.

When the ambient temperature is around and lower than 0°C, this heat exchanger will start freezing by the humidity in the air.

The purpose of this internship is for given heat exchanger, try to fit a function to correlate the impact of different parameters (fan rpm, capacity, humidity ...) on the main parameters of interest for frosting: delivered energy, time until significant heat exchanger performance drop.

For this internship you will use existing data to make the analysis and to try to correlate the impact of such freezing.

Your profile

- You are currently pursuing studies in Engineering (last year bachelor's or first Master's)
- Knowledge/interest about the working principle of heat pump products is a must
- You are a person with a strong technical interest
- You are a person who likes to work and analyse data.
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

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EMEA Development Quality Assurance department

Department

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Heat Recovery systems for test room energy saving improvements

Your role

To have stable conditions in our test rooms we make cold brine & hot brine. For cold brine we invested in new chillers where we can make hot brine via heat recovery. We expect you to finetune the system to have optimal settings and energy savings. You will have to take and propose actions and countermeasures based on theoretical input and actual measurements of the systems to come to the most optimal solution in terms of investment vs energy saving set forward. There will be a lot of measurements but you have the possibility to extend these based on the needs to have a good evaluation.

Your profile

- You are currently pursuing studies in Engineering (last year bachelor's or first Master's)
- Knowledge/interest about the working principle of heat pump products is a must
- You are a person with a strong technical interest
- You are a hands-on person
- You are a team player who is driven to find solutions for technical requirements
- Knowledge of both spoken and written English is essential for this internship

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