

# Baekeland PhD mandates

## Inter-sectoral mobile researchers obtaining a collaborative industry-academia dual desk PhD

### INTER-SECTORAL STAFF MOBILITY

#### Contact

##### KU Leuven

Bert Pluymers,  
Industrial Research Manager  
bert.pluymers@kuleuven.be  
+32 16 32 25 29

Wim Desmet,  
Head of research unit  
wim.desmet@kuleuven.be  
+32 16 32 25 27

Claus Claeys,  
Senior researcher  
claus.claeys@kuleuven.be

##### Siemens Industry Software

Herman van der Auweraer,  
Corporate RTD Director  
herman.vanderauweraer@siemens.com  
+32 16 38 43 25

#### Main actors

- The Agency for Flanders Innovation & Entrepreneurship grants the mandate;
- a company with activities in Flanders, that acts as the main applicant, and is responsible for co-financing;
- the industrial mentor appointed by the company;
- the mandate holder;
- the knowledge centre with which the mandate holder is affiliated (a university, research centre, etc.);
- the academic promotor, responsible for the doctoral supervision and who is affiliated to a Flemish university.

To support basic dual desk PhD research that – if successful – has clear industrial application and added value, and to train knowledge workers for the future, the Flemish government implemented the Baekeland PhD Mandate funding scheme. The funding scheme aims to build up scientific or technological knowledge as a basis for economic applications by supporting a mobile researcher financially to perform research to achieve a PhD. This means that the project should fit within strategic basic research with an economic finality, defined as high quality research that is innovative and provides the PhD student with ample intellectual challenges.

The Baekeland PhD mandates are projects that are assigned to a 'consortium' involving a PhD candidate, a Flemish company and a Flemish university or another type of knowledge centre (which is then cooperating with an academic promotor affiliated to a Flemish university). The mandate holder can be an employee of the company or an employee of a university/knowledge centre. The programme is open to all candidates that can be admitted to a PhD programme at a Flemish university. Meaning that there are no additional restrictions/requirements on nationalities and or academic disciplines.

A Baekeland PhD mandate provides funding for 4 years pay-roll, operating costs, equipment costs and fixed costs in relation to one specific employee (the mandate holder). The funding granted by the government depends on the size of the company and ranges from 50% to 70%. The funding can get extra support if there is a well-balanced collaboration between several independent companies.

#### Process Main Stages

##### STAGE 1 – THE APPLICATION STAGE

A project proposal is defined and developed in consultation with all partners: the company (companies), the knowledge centre(s) and the candidate mandate holder. The partners must sign a mutual cooperation agreement. Evaluation of the project is based on the project and an oral defense of the mandate holder.

##### STAGE 2 – THE PROJECT STAGE

The work of the project is carried out by the mandate holder. In this process the mandate holder is supervised by his academic and industrial supervisor and their environment.

##### STAGE 3 – MIDTERM EVALUATION

After 2 years progress is reported on the scientific results, the prospects for industrial application and the expenses made.

##### STAGE 4 – CLOSING OF THE PROJECT

At the end of the project a report is filled including the reached scientific progress, the execution of the innovation goal and its applications, a valorisation report and a financial report.

## Touchpoints & Bottlenecks

### TOUCHPOINT 1

Reaching out to the other party to identify the cross points of academic research tracks and industrial needs. This requires knowledge of the different parties their expertise and needs. Often the industry and academic parties know each other of past joint projects and can use this as trigger to get in contact.

### TOUCHPOINT 2

Setting up a joint project through live meetings, telephone conferences and sharing proposal versions.

### TOUCHPOINT 3

Meetings between the mandate holder, the industrial supervisor and the academic supervisor. This allows to assess progress according to each party's priorities, update the work plan, confirm next period targets and solve any operational issue of joint relevance (test setups, use cases, investments, research visits, publications, IP ...).

### TOUCHPOINT 4

meetings between the mandate holder and one of the supervisors to discuss specific parts of the projects, which might not be fully disclosed to the other party.

## Success Factors / Barriers

Success of Baekeland projects strongly on the degree of understanding between the mandate holder, the academic supervisor and the industrial supervisor. Respecting and understanding each other timelines and IP concerns. An upfront discussed mutual agreement between the partners concerning the intellectual property rights on the project results also avoids discussion on data sharing between research groups later on in the project.

Regular meetings between the mandate holder, the industrial supervisor and the academic supervisor is also known to be a success factor. This to continuously align visions on the project, and let mutual trust and understanding grow.

Next to IP, a barrier can be the difference in time horizon. In academics the timespan of a PhD, 4 year, is relatively short, for companies this is already long term. There is a need of a strategic vision of both, which should also result in a balanced and harmonic proposal. Meaning that the research should be set up as both academically relevant and industrially applicable on the mid-term.

## Conclusion

The Baekeland PhD mandate programme partially supports a PhD researcher for strategic basic research with an economic finality. The programme has as goal to foster industry-academia collaboration and train knowledge workers to ensure innovation in Flanders towards the future. The programme has been running since 2009 and is positively evaluated by the Flemish government. The rate of application is increasing, indicating that both industry and academia value the programme.

### DO

- Respect each other's interests, timelines and KPI's
- Make clear upfront agreements concerning intellectual property and data sharing and on the arrangements for dual-desk time allocation (a critical amount of time is needed at both sites to ensure success)
- Have regular meetings with the two supervisors and the mandate holder to align visions and understand each other's interest.

### DON'T

- Forget that the project is a PhD project, needing to advance the international state-of-the-art and provide the PhD student with ample intellectual properties
- Go for short term success; PhD research is a 4-year process, where added value cannot be expected from day one.

