

# Casimir

Programme brochure round 2007



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# 1 Introduction

**Our future lies in the knowledge economy: an economy in which knowledge is embodied in workers whose education and performance help to ensure an on-going process of innovation. Current shortages of scientists, technicians and R&D workers pose a serious threat to that future.**

The Dutch government's Delta Plan for Science and Technology contains measures to boost young people's interest in pursuing educational and professional opportunities in science and technology and to enhance the attractiveness of courses and careers in those sectors. To make jobs in research more attractive, government wishes to increase the mobility of research staff in the public and private sector. Mobility in the form of exchanges of workers between the two sectors is a good way of making research careers more attractive and interesting. It can enable academic researchers to participate in corporate R&D and industry researchers to participate in research at public-sector knowledge institutions.

Exchange projects of this kind give researchers the chance to experience a different professional environment. They broaden the understanding of young researchers and provide a fillip for those at a more advanced stage of their careers. The resulting circulation of knowledge also ensures fuller use of existing research potential and creates stronger networks and closer interaction between parties in the public and private sector.

## 2 Aims

**The Casimir programme helps to achieve these aims by providing financial incentives for companies and knowledge institutions to organise exchanges between talented researchers in the public and private sectors and to offer them enhanced career prospects. By doing so, the programme promotes mobility, encourages high-quality research (both pure and applied) and helps to overcome the knowledge paradox through the reciprocal transfer of knowledge.**

In 2004 the Dutch Ministry of Economic Affairs put out a call for proposals for experimental Casimir projects. The aim of the exercise was to develop criteria for a more lasting programme. Subsidies were awarded to 17 experimental projects. In 2005 and 2006 the Casimir programme was piloted by NWO. In 2005 151 proposals were received and 23 subsidies were awarded. In 2006 35 proposals were received and 15 subsidies were awarded.

In 2007 the budget for the Casimir programme is €2.8 million and the intention is to award subsidies to approx. 30 excellent proposals.

The parties involved in the Casimir programme are the Netherlands Ministry of Economic Affairs and Ministry of Education, Culture and Science, the Platform Bèta Techniek (the executive body for the Delta Plan for Science and Technology), and the Netherlands Organization for Scientific Research (NWO).

## 3 Directives for applicants

**Every application must be submitted by a trio consisting of a talented graduate or researcher (known as the Casimir candidate and secretary of the project) at a knowledge institution or company in the Netherlands, a representative of a company, and a representative of a knowledge institution.**

The applicant company and knowledge institution must make a practical contribution to the proposed project. No more than one knowledge institution and one company may be involved in any given application.

The terms and conditions of the Casimir programme are different from the general terms and conditions of NWO grants. When different the specific terms and conditions of the Casimir programme prevail. In all other cases the general terms and conditions are valid.

### 3.1 Who can apply?

The programme is targeted primarily at researchers in the fields of science and technology. In view of the under-representation of women and ethnic minorities in the research field, applications by them will be particularly welcome.

The programme is open to experienced researchers in the following categories: HBO-level research staff, post-doctoral researchers, university lecturers or senior lecturers, professors, and researchers working in the private sector. In addition, final-year degree students (due to graduate in 2007) and recent university graduates may apply for a four-year 'AIO' appointment to undertake doctoral research. (See also Funding.)

Applicant companies and knowledge institutions must be based in the Netherlands. The knowledge institution must either be a university with a research mission (Erasmus University Rotterdam, Tilburg University, Radboud University Nijmegen, University of Groningen, Delft University of Technology, Eindhoven University of Technology, Wageningen University and Research Centre, University of Twente, Leiden University, Maastricht University, Utrecht University, University of Amsterdam, VU University Amsterdam) or a university hospital, HBO institution, KNAW or NWO institute, the Netherlands Cancer Institute (NKI), a TNO institute or a GTI. No other type of knowledge institution is eligible for participation in the Casimir programme.

The company may be a major company with its own R&D department, a small (e.g. high tech) company or technology start-up, or an innovative SME. It must be an existing company set up with a profit motive and registered as a private or public limited company (BV or NV). Since the aim of the Casimir programme is to encourage mobility between the public and private sector, it is essential that the company should exhibit all the normal features of a private-sector organization.

Casimir subsidies cannot be used to fund exchange or research projects that have already started. Such projects are the subject of pre-existing legal commitments and therefore ineligible under the General Terms and Conditions of NWO.

## 3.2 What can be applied for?

Proposals are invited for funding under the programme. Applications will be assessed on the basis of the criteria specified in this brochure and subsidies will be awarded to those judged to be most promising.

The maximum amount that can be awarded for any individual proposal is € 100,000 and this is intended to cover only the staff costs of the exchange candidate. The subsidy application must relate only to the work to be done by the exchange candidate at the host institution. (Only in the case of PhD students ('AIOs') are dual arrangements eligible for subsidy. In their case, the plan of work must show that the student will work for a substantial proportion of the relevant period at the knowledge institution and for a substantial proportion with the company.)

All other costs must be met by the company and knowledge institution involved. Total project costs must amount to at least double the staff costs to be covered by the subsidy. The exchange candidate must move to the new working environment at least for the duration of the Casimir project, although possibly only on a part-time basis. The project must also produce a demonstrable improvement in the exchange candidate's career prospects.

*For example: a graduate engineer is employed as a researcher in a company R&D department. She applies for a subsidy of € 50,000 to enable her to spend two days a week in 2008 and 2009 doing research at a university. The subsidy will cover her salary costs for those two days, while the remaining project costs (at least double the amount of subsidy for which she is applying) are to be met jointly by the company and the knowledge institution.*

### Funding

The maximum amount of subsidy that can be awarded for each Casimir project is €100,000. The subsidy is intended exclusively to meet the staff costs associated with the specified exchange candidate. The subsidy application must relate only to the work to be done at the host institution. The knowledge institution and company involved in the application must guarantee to make a contribution covering the remaining costs of the project. This contribution may consist of additional manpower (for example, for support or supervision) and/or any non-subsidised salary to be paid to the Casimir candidate in relation to the project, as well as costs of apparatus (depreciation), training, conference visits, etc. The subsidies will be disbursed by NWO in (probably annual) instalments to the formal employer of the exchange researcher. The final instalment (20%) will be disbursed following receipt of a final research report and final project accounts (in accordance with the conditions for the award of Casimir subsidies).

A PhD student ('AIO') may be formally employed either by the knowledge institution or by the company but must work on the premises of both organizations. (The plan of work must show that this will be the case.) Only AIO projects are eligible for dual funding.

*For example: A student is due to graduate at the end of 2007 and would like to go on to undertake a PhD project. Having obtained a Casimir subsidy for this purpose, he becomes formally employed by the university but spends a substantial part of his time working with the company. The maximum subsidy is € 100,000. This is enough to cover approx. 60% of his salary costs. The remaining salary costs and other costs of the project must be paid jointly by the company and the knowledge institution. The overall project costs amount to at least € 200,000. The non-subsidised salary costs can be counted as part of the matching contribution.*

Industry researchers may only apply for funding to work at a knowledge institution. They may apply for funding for a PhD research project, but in that case they will not be eligible for dual funding (i.e. funding both for the work done on their own company premises and for that undertaken at the host institution). Work done on their own company premises in the context of the Casimir project (as shown in the plan of work) may, however, be counted as part of the matching contribution.

Postdoctoral researchers (or candidates due to obtain their doctorates in 2007) – like other researchers at knowledge institutions – may only apply under the Casimir programme for funding to work with a company. They must maintain contact with the research team at their home institution (as shown in the plan of work). Work done at the knowledge institution in the context of the Casimir project can be counted as part of the matching contribution. Research that has already started is not eligible for funding.

### **3.3 Deadline**

Applications must reach NWO no later than 12.00 noon on 4 September 2007.

### **3.4 Sending in the application**

The application must be submitted by the Casimir candidate on the appropriate electronic application form and in accordance with the requirements set out in this brochure. Casimir application forms can be downloaded from the relevant NWO subsidy page ([www.nwo.nl/casimir](http://www.nwo.nl/casimir)). All applications must be submitted electronically using the Iris system, which can be accessed via [www.iris.nwo.nl](http://www.iris.nwo.nl).

### **3.5 Specific terms and conditions of the Casimir programme**

#### **3.5.1 Screening for compliance with formal requirements<sup>1</sup>**

To qualify for consideration, each application must comply with the formal requirements set out below. At the start of the procedure, applications will be screened for compliance with these formal requirements. Applications that fail to comply with them will not be eligible for further consideration.

The formal requirements for the submission of applications are as follows:

- Applications must reach NWO no later than 12 noon on 4 September 2007. They must be submitted by the Casimir candidate via the Iris system on a completed and signed Casimir application form and must be in accordance with the requirements set out in this brochure.
- Every application must be signed by one exchange candidate (a graduate or researcher at a knowledge institution or company in the Netherlands), one representative of a company based in the Netherlands, and one representative of a Dutch knowledge institution.
- Applications must relate only to the staff costs associated with the Casimir candidate and the maximum amount that can be awarded is €100,000.

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<sup>1</sup> The original Dutch-language text of the brochure is the authoritative version. Where the English-language text is open to a different interpretation, no additional rights may be derived from it.

- The company and/or knowledge institution must make a joint contribution at least equal in monetary value to the amount of subsidy requested. This contribution may consist of manpower (for example, for support or supervision) and/or any non-subsidised salary costs to be paid to the Casimir candidate in relation to the project, as well as infrastructure provision, training costs, bench fee, etc.
- Every application must be accompanied by a declaration of intention from the knowledge institution or company concerning the career of the exchange candidate.

### **3.6 Submission of applications**

The application must include (see Casimir application form):

- Details of the project plan, including the plan of work and complete budget
- Brief details of the knowledge institution and company
- Curriculum vitae (CV) of the exchange candidate
- Declaration of intention by the institution or company concerning the career prospects of the exchange candidate
- A guarantee from the knowledge institution and company that they will jointly provide resources (manpower, infrastructure and training) at least equal in monetary value to the amount of subsidy requested.

# 4 Assessment procedure

## 4.1 Procedure

A cross-disciplinary assessment committee will compare and discuss the applications and rank them on the basis of the assessment criteria. No use will be made of any peer review procedure. The Casimir candidates submitting the most promising applications will be called for interview. This will give them a chance to present their proposals in person and answer questions. The assessment committee will then formulate its final recommendations to the Governing Board of NWO on the basis of the proposals and the interviews.

### 4.1.1 Decision

The NWO Governing Board will reach its final decision in November and applicants will be notified of the outcome as soon as possible thereafter.

### 4.1.2 Follow-up action and reporting

The exchange researcher must commence work on the Casimir project and move to his/her new working environment (as described in the plan of work) within four months of subsidy being awarded. If possible, the exchange should take the form of a secondment. The award will be subject to conditions relating to monitoring (reporting arrangements and final accounts), funding arrangements, and the presentation of a definitive agreement between the company and the knowledge institution concerning intellectual property rights.

### 4.1.3 Intellectual property rights

Under Dutch patent law, intellectual property rights to knowledge resulting from the project will accrue automatically to the formal employer of the exchange researcher unless the parties have a written agreement to the contrary. If a party other than the employer of the researcher wishes to obtain the intellectual property rights, that party must purchase them from the employer at the current market price. The market price must be determined by an independent third party. Results which are not covered by intellectual property rights may be disseminated widely to interested third parties (perhaps after a delay of up to 12 months).

## 4.2 Timetable for 2007

- 4 September 2007  
deadline for initial submission of applications (12.00 noon)
- early October  
initial ranking of applications by committee
- 2nd half October  
interviews with selected applicants and final ranking by committee
- mid-November  
decision by Governing Board of NWO
- mid November 2007  
notification of outcome to applicants

## 4.3 Criteria

Quality-related assessment criteria will be:

### 4.3.1 The merits of the candidate

- Talent for research, as demonstrated by final-year dissertation, doctoral thesis, publications, patents and/or other achievements
- Disciplinary background (preferably in science and/or technology)
- Talent for public-private cooperation in the research field, as demonstrated by e.g. the application of research results.

### 4.3.2 The merits of the research proposal

Quality of research plan as demonstrated by:

- Originality/innovativeness
- Effectiveness of approach
- Potential of research for application
- Feasibility in terms of manpower, funding, research infrastructure and team, and time.

### 4.3.3 Suitability in the context of the Casimir programme

- Added value of cooperation between knowledge institution and company, and access to knowledge new (not yet available) to the knowledge institution and/or company<sup>2</sup>;
- Economic prospects of the application: as demonstrated by field, market position, market opportunities, and spin-off
- Probability of improvement in the candidate's career prospects
- Influence of the mobility project within the organizations involved (concrete activities to be undertaken to publicise the exchange between the public and private sectors).

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<sup>2</sup> The application must give a clear indication of whether there has been any earlier cooperation, exchange of knowledge or mobility arrangement between the company and the knowledge institution. If so, it must explain what form this has taken, what added value the proposed Casimir project will offer in these respects, and whether the project is likely to have a lasting influence on the relationship between the company and the knowledge institution. Also any potential conflict of interest must be mentioned and explained in the application.)

# 5 Further information

## 5.1 Assessment Committee

The NWO Governing Board of NWO appoints the Assessment Committee on a yearly basis.

## 5.2 Casimir

Hendrik Brugt Gerhard Casimir (1909 - 2000) was a Dutch physicist. In 1948, he predicted the Casimir effect. This is the phenomenon by which two metal plates placed in extremely close parallel proximity to each other attract each other through the creation of a vacuum resulting from quantum fluctuations. This attractive force is caused by the fact that only virtual particles of a particular wavelength can exist between the two plates. The effect was not actually measured until the mid-1990s, when it was observed at the Los Alamos National Laboratory, providing experimental confirmation of certain aspects of quantum theory. Hendrik Casimir was for a long time head of the Philips research laboratory in Eindhoven. His career was a classic example of the marriage between science and industry

## 5.3 Contact information

The latest information on the Casimir programme can be found on the NWO website. If you are interested in the programme, please visit the website before contacting NWO.

Any further questions can then be directed to

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