# Research vacancy

July 1 2019

In the department of Electrical Engineering (ESAT), research group "Light&Lighting Laboratory", KU Leuven Campus Gent, we are looking for a candidate to perform research entitled

*"Development of a new road and tunnel lighting concept"*

In this research project, the correlation between the human visual perception of an outdoor road and tunnel scene and its optical characteristics (a colorimetric or hyperspectral image) will be investigated in order to improve visibility and safety while keeping energy consumption minimal. A new illumination concept for road lighting, called "probeam", will be investigated. This research project is initiated and funded by Rijkswaterstaat (RWS), the Directorate-General for Public Works and Water Management, The Netherlands.

The following tasks are to be performed:

- Characterization of the scenes (colorimetric or hyperspectral camera, luminance, illuminance, colour distribution)
- Organizing and analyzing assessments by human observers (from several ages)
- Statistical analysis of the data
- Developing a physiological based model inspired by the human visual system to describe the data
- Evaluating a new "pro-beam" lighting concept
- Contacting authorities to organize meetings, pilot tests, . . .
- Writing scientific papers in English and vulgarizing papers in Dutch.

The research will be guided by a multidisciplinary team consisting of Willem Zandvliet (RWS), Prof. Maurice Donners (TU/e and Signify), Prof. Maarten Kamermans (NIN), Prof. Kevin Smet (KU Leuven) and Prof. Peter Hanselaer (KU Leuven).

We are looking for an enthusiastic candidate with the degree Master of Science, Master of Engineering or Master of Engineering Technology (or a similar degree) and with a strong interest in lighting, visual perception, optical measurements and image processing. In addition to a scientific research attitude, a hands-on attitude, strong managerial skills and well-developed written and oral communication skills in Dutch and English are required. The candidate should hold a car driving license to evaluate the test sites during the evening and the night.

We offer a position for at least 3 years. The research can lead to a PhD degree issued by KU Leuven or jointly by KU Leuven and TU/e on condition that an academic approval will be granted to the candidate.

The tentative starting date is October 1, 2019. The research will mainly be executed within the Light&Lighting Laboratory of KU Leuven, located at the Technology Campus in Ghent.

The main research topics of the Light&Lighting Laboratory of KU Leuven (https://iiw.kuleuven.be/onderzoek/lichttechnologie) are optical design of luminaires, energy-efficient indoor lighting, innovative light sources, color/appearance of materials and light sources and radiometric and photometric metrology. The laboratory features the most advanced measurement equipment, necessary to perform research and to offer support towards the industry. Currently 21 people are involved in the research group (8 PhD students) and more than 70 companies are member of the industrial network.

For more information please contact Prof. dr. Peter Hanselaer, tel.: +32 9 265 87 36, mail: peter.hanselaer@kuleuven.be.

Please respond before 11-09-2019