Short Biography

Valéry Ann JACOBS was born in Belgium on December 4th, 1981. After finishing high school in 2000, she landed in a commercial function at a company that allowed her to continuously travel across Europe while obtaining a degree in photography in evening courses. Only later, she decided to pursue an academic education in science. In 2008, she graduated as a bachelor in Physics with a minor in Mathematics and in 2010 as a master in Astronomy and Astrophysics from the University of Leuven (KU Leuven), Belgium. After working for a year in the energy sector, she returned to academia to work towards a PhD degree in the frame of a joint-PhD between the Vrije Universiteit Brussel (VUB) and KU Leuven. In 2015, she obtained the degrees of PhD in Engineering Technology at KU Leuven and PhD in Engineering Sciences at VUB (with highest distinction, summa cum laude), by studying the metrology, photometry and colorimetry of arrays of LEDs, mainly applied to surgical luminaires. Since then, she has been working full-time as a Professor in light and lighting at VUB in the department of Electrical Engineering and Energy Technology (ETEC), where she is the team-lead of Merlin, a group of 3 professors, 1 post-doc, 5 motivated PhD students, 1 scientific collaborator and an administrative and technical support team. They work in fields of V2X communication using visible light, daylighting, electrical lighting, multisensorical spaces, comfort & wellbeing. Since 2020, she has also been appointed academic advisor on wellbeing to the vice-chancellor of the university and since 2021 she is also a member of the national health council in Belgium.

Research outputs

Road lighting – the trade-off between safety perception and light pollution

Angular Dependency Of The Limiting Photometric Distance

Novel sequential RGB+NIR fluorescence lifetime imaging with a single nanosecond time-gated CAPS camera

Impact of colour temperature and illumination level on safety perception for parking garage lighting

Towards public LED lighting with minimal impact on insect movement

Off-axis limiting photometric distance of Lambertians and narrow beams

Reducing stray light In outdoor luminaires
Angular Dependency Of The Limiting Photometric Distance

Development of a control system to evaluate the impact of artificial light modulation on insects

Impact of advanced inverter functions on low-voltage power grids

Daylight Glare Probability prediction for an office room

Optimizing camera placement for a luminance-based shading control system

Towards An Improved V-VLC Optical Channel Modelling

Towards An Improved V-VLC Optical Channel Modelling

Beyond the State of the Art of Electric Vehicles: A Fact-Based Paper of the Current and Prospective Electric Vehicle Technologies

Data-driven transfer function modelling of building dynamics using a frequency domain approach

Constructing a Transparent Air Chamber for an Innovative Ventilation System in an Operating Room

Shading control strategy to avoid visual discomfort by using a low-cost camera: a field study of two cases

Improved system and method for illumination and ventilation of an operating room

New EU Energy Efficiency Platform for cities: Lighting the VUB campus: Cases studies by ETEC and VUB infrastructure

Improved system and method for ventilation and illumination of an operating room
**Analysis of errors associated with photometric distance in goniophotometry**

**On spectral ray files of light sources using principal component analysis**

**Near-field and far-field goniophotometry of narrow-beam LED arrays**

**Rayfiles including spectral and colorimetric information**

**Accurate Determination of the Near Field Illuminance From Narrow Beam LED Arrays Using Ray Files**

**Thermal comfort of the surgical staff in the operating room**

**Accurate Determination of the Near Field Illuminance from Narrow Beam LED Arrays using Ray Files**

**Near-field and far-field goniophotometry of focused LED arrays**

**From photometry to surgery: shedding light in the darkness**

**High-resolution temporal profilometry using Fourier estimation**

**Color sensitivity of the multi-exposure HDR imaging process**

**Projection Moiré profilometry simulation software for algorithm validation and setup optimalisation**

**Quality Assessment of Virtual Prototypes of Surgical Luminaires using Near-field Ray-data**
Using an Xbox Kinect camera to determine the surgical luminaire position in an operating room

Simulating Surgical Luminaires by Ray Files

The use of Near Field Goniophotometers for LED lighting applications

Phd Seminar on Building Physics

HERMES high-resolution spectroscopy of HD 149382. Where did the planet go?

Projects
OZR3836: Backup mandate Research Council: Exploring the potential of single-photon detection in digital optical communication
Kuijk, M., Jacobs, V. A. & Coosemans, J.
1/11/21 → 31/10/22

BRGCOC13: CoCreation 2021: COM.COM.COM: Creating Compassionate Commons & Communities
De Backer, F., Dury, S., Vanderstichelen, S., Jacobs, V. A. & Rodeyns, J.
1/09/21 → 31/01/22

CONI682: Event: Public Lighting: (VUB Campus, U-Residence 16 May 2019 )
Jacobs, V. A.
10/04/19 → 31/12/19

IOF3010: GEAR: Transitioning to future sustainable transport systems Supporting a sector in full transition: valorisation of the MOBI expertise
1/01/20 → 31/12/24

BRGEOZ436: ILSF 2023: Luminal Space
Jacobs, V. A. & Mathieu, C.
1/04/23 → 31/10/23

OZR3945: Interpersoonlijke relaties
1/04/22 → 31/03/23

IOFP0C47: IOF Proof of Concept: Redirect - Smart and Efficient Driving Circuits for LED lighting Systems and DC Networks in Various Applications
Jacobs, V. A., Hegazy, O., Geury, T., Tran, M. T. & El Baghdadi, M.
15/07/21 → 14/07/23
WDGO1840: Onderaanneming: Operating Room Future Proof
Jacobs, V. A.
1/02/19 → 1/02/21

OZR3986: Onderwijstijdmeting (Z)AP VUB
Onderwijs en Studentenzaken, V., Van Craen, N., De Cock, V., Devos, R. & Jacobs, V. A.
1/09/22 → 31/08/23

DOZ113: Ontwikkeling van een capaciteitsmodel onderwijs aan de VUB
Onderwijs en Studentenzaken, V., Van Craen, N., De Cock, V., Devos, R. & Jacobs, V. A.
1/09/22 → 31/08/23

IWTO034: O&O: Experimental OR
Jacobs, V. A.
1/01/18 → 30/08/18

WDGO1495: Raamovereenkomst: Labo ZE010 van ETEC gebruik van een opstelling die een variabale spanning en een variabele netfrequentie levert. Metingen worden uitgevoerd door ADB Safegate
Lataire, P., Jacobs, V. A., Heymans, F. & Van Den Bossche, P.
13/09/17 → 31/12/17

WDGO1608: Services Agreement: Literature and Feasibility Study: varations in spectral radiant flux
Thienpont, H. & Jacobs, V. A.
3/11/18 → 3/02/19

OZR4130: Verlenging - "Argument" - Academische relaties: grensoverschrijdend gedrag uitgekleed -
1/06/23 → 31/05/24

CONI762: VUB welzijnsconferentie (inschrijvingen conferentie)
Jacobs, V. A.
9/02/23 → 5/05/23