

ARTIFICIAL VISION 2019

THE INTERNATIONAL
SYMPOSIUM
ON VISUAL
PROSTHETICS

Friday, 13th – Saturday, 14th December, 2019
Aachen, Germany

INVITATION

CALL FOR ABSTRACTS

MEETING INFORMATION

Center for Technology
Aachen Europaplatz
www.artificial-vision.org

Deadline for the receipt
of abstracts:

Sunday,
15th September, 2019

RWTHAACHEN
UNIVERSITY

 **JÜLICH**
FORSCHUNGSZENTRUM

The treatment of blindness caused by degenerative or dystrophic retinal diseases remains an unsolved medical but also social problem.

Although significant progress has been made, e.g. with the approval of the first gene therapy for RPE65 associated Leber's Congenital Amaurosis (LCA) on one hand or with the fabrication and implantation of retinal implant systems in RP patients on the other hand, there is still a bumpy road ahead.

Several years ago the implantation of retina implant systems sounded as a success story. Totally blind subjects were able to perceive light, to locate and avoid obstacles, some were even able to slowly read large letters and to identify high contrast objects. However, this success was not well recognized in the ophthalmic community and in the patient community. The number of implantations did not meet the expectations and calculations of the companies. As a result, e.g. Retina Implant AG stopped fabricating the Alpha AMS device and Second Sight also stopped their Argus II activities. Clinical results in a larger scale are now expected from trials with the subretinal photovoltaic device of PIXIUM and also from the cortical stimulation device ORION. Other activities are expected from the Australian and from the Japanese consortium and possibly also from other groups.

However, we learned a lot from the experiences with the early implants. Many research projects are still running to better understand the mechanisms of retinal degeneration, how to interfere with these mechanisms, what components of retinal or cortical implants can be improved or optimized to achieve a better outcome. New projects are planned to solve more general bottlenecks of retinal stimulation using implants.

The Artificial Vision 2019 Conference in Aachen, Germany serves as an interdisciplinary forum bringing together researchers of all disciplines involved in the design, planning, fabricating and testing of visual prostheses as well as scientists from the neurobiological world giving insights in the process of visual system degeneration. We also welcome the participation of patients in this conference to better understand their needs and expectations.

This conference is a fully open, non-invitational meeting. For young researchers we will have a number of travel grants available. The conference is supported by the German Research Association (Deutsche Forschungsgemeinschaft, DFG).

We are welcoming talks and presentations related to any aspect of Artificial Vision. Please send in an abstract via the online abstract submission system (www.artificial-vision.org) not later than by September, 15th.



Together with my colleagues Wilfried Mokwa (RWTH), Frank Müller and Andreas Offenhäusser (RC Julich) I cordially invite you to come to Aachen.

A handwritten signature in blue ink, appearing to read 'P. Walter'. The signature is stylized and written in a cursive-like font.

Peter Walter

Department of Ophthalmology, University Hospital Aachen
RWTH Aachen University, Medical Faculty

The goal of the International Symposium on Visual Prosthetics – Artificial Vision 2019 – is to provide a platform for researchers and clinicians to meet, to present, and to discuss the latest advances and achievements in the field of providing vision with electronic implants to the blind. The symposium will cover all aspects of Artificial Vision such as

- mechanisms of degeneration in the visual system
- principles of electrical stimulation in the visual system
- interfaces to the visual system: electrodes
- stimulation and recording devices: complex implants, systems, algorithms
- preclinical tests: biocompatibility and proof of concept studies
- clinical experiences: patient selection, surgery, and functional outcomes
- patients expectations, rehabilitation aspects
- new ideas and visions

PRELIMINARY PROGRAMME STRUCTURE

Friday, 13th December, 2019

- 13:00 h – 14:00 h **Come together reception**
- 14:00 h **Opening remarks**
- 14:30 h **Session I**
Mechanisms of degeneration in the visual system
- 16:00 h **Session II**
Principles of electrical stimulation in the visual system
- 17:30 h **Session III**
Interfaces to the visual system - electrodes
- 18:30 h **End of day I**
- 20:00 h **Conference dinner, Castle Rahe, Aachen**

Saturday, 14th December, 2019

- 09:30 h **Session IV**
System design, algorithms and fabrication
- 11:00 h **Session V**
Preclinical studies, biocompatibility, surgery
- 12:30 h **Lunch break**
- 13:30 h **Session VI**
Clinical outcome, measuring artificial vision
- 15:00 h **Session VII**
The patient's perspective, outlook and new projects
- 16:00 h **Closure remarks – farewell reception**

- Date** Friday, 13th December, 2019, 13:00 h – 18:30 h
Saturday, 14th December, 2019, 09:30 h – 16:00 h
- Venue** **Center for Technology Aachen Europaplatz**
Dennewartstraße 25-27, 52068 Aachen, Germany
- Homepage and Online Registration** www.artificial-vision.org
- Scientific programme and further information** **Prof. Dr. Peter Walter**
Department of Ophthalmology, University Hospital Aachen
RWTH Aachen University, Medical Faculty
Pauwelsstraße 30, 52074 Aachen, Germany
Phone: +49 (0) 2 41 / 8 08-81 91, Fax: +49 (0) 2 41 / 8 08-24 08
E-Mail: pwalter@ukaachen.de
- Organization** **Congress-Organisation Gerling GmbH**
Wertstraße 23, 40549 Düsseldorf, Germany
Phone: +49 (0) 2 11 / 59 22 44, Fax: +49 (0) 2 11 / 59 35 60
E-Mail: info@congresse.de, Homepage: www.congresse.de
- Official Language** English
- Hotel Booking** See hotel on the registration form
(or online www.artificial-vision.org)
- Social Event** **Conference Dinner**
Friday, 13th December, 2019
20:00 h
Schloss Rahe
Schloss-Rahe-Straße 15
52072 Aachen



ATTENDANCE FEE

Registration	Until 29 th September	After 29 th September	On site
International symposium attendance fee	EUR 180,-	EUR 200,-	EUR 220,-
Reduced rate for PhD students and residents*	EUR 100,-	EUR 120,-	EUR 140,-

*PhD Students and residents must supply a letter of verification as proof of training. The letter has to be sent to the congress organization prior to the meeting.

The attendance fee covers the costs for coffee breaks, lunch, and the conference dinner (accompanying person EUR 50,-). Incl. VAT and excl. foreign transfer fees.

- Payment** by bank transfer (bank details are quoted on your confirmation and invoice. Please do not transfer money without noting your invoice number!) PayPal or by credit card: VISA, AMERICAN EXPRESS, MASTERCARD

Important notes for participants

The attendance fee covers the costs for coffee breaks, lunch, and the conference dinner. If you register late or on-site we cannot guarantee for lunch and participation in the social program.

You are encouraged to apply for the meeting either online, by mail or by fax.

Cancellation for the symposium has to be made via e-mail or via

fax (+49 (0) 2 11 / 59 35 60) by 9th November, 2019. In any case an administration fee of EUR 22,- has to be paid. After this date no refunds can be made.

Changes, errors and misprints excepted.

CME-POINTS

The Symposium is registered at the Ärztekammer Nordrhein providing CME-points for the *German Continuing Medical Education System*. Please bring your Barcode Labels and we will register you for CME-point documentation.

An equivalent Certificate of Attendance will be given to you upon on-site registration.

CALL FOR ABSTRACTS**Abstract submission**

Please submit your abstract online:

www.artificial-vision.org

Deadline for abstract submission: Sunday, 15th September, 2019

Layout

Your abstract must not exceed 2000 letters in total (including blanks), it must be written in Times New Roman 10 point with single line spacing. Start with the title, authors, and affiliation(s) followed by a blank line followed by a standard abstract structure (Objective, Materials & Methods, Results, Discussion). In case of external or institutional funding please acknowledge the sponsor.

Example**The thresholds for retinal stimulation in blind RP subjects.**

Franz Reuter, Julia Sachtweh, Reinhard Meier

Department of Ophthalmology, Island City, Elsewhere

Objective. To describe the stimulation thresholds for subretinal stimulation using platinum red electrodes embedded into new insulation materials.

Materials and Methods. In six blind RP patients a new subretinal device was implanted and cortical potentials were recorded upon electrical retinal stimulation. Cortical potentials were determined using a new response isolation algorithm developed by Meier et al. The cortical responses were correlated with stimulus parameters.

Results. In all six patients the implantation was done successfully. All patients had visual percepts. In all patients cortical potentials can be recorded and the the stimulus duration necessary to obtain a response was 67 ms cathodic first with an mean amplitude of 435 μ V.

Discussion. The stimulation at threshold was well within the non-toxic range for tissue stimulation and no patient had any adverse events.

Acknowledgment. This work was supported by ABC grant 874987.

International Airports. High Speed Train System

From Frankfurt: Take the ICE High Speed train from Frankfurt Airport Station to Cologne Main Station (approx. 1 h) and continue to Aachen Main Station (approx. 45 – 60 min).

From Düsseldorf: Take the train from Düsseldorf Airport Station to Düsseldorf Main Station (approx. 10 min) and then continue to Aachen Main Station (approx. 1.5 h).

From Cologne. Take the train from Cologne Airport Station to Cologne Main Station (approx. 15 min) and then continue to Aachen Main Station (approx. 45 – 60 min).

From Aachen Main Station take a taxi to Technologiezentrum at Europaplatz

By car.

From Frankfurt Airport you can drive highway A3 to Cologne and then change to A4 direction to Aachen. At AK Aachen please change to A544 direction Aachen Europaplatz (approx. 3 h).

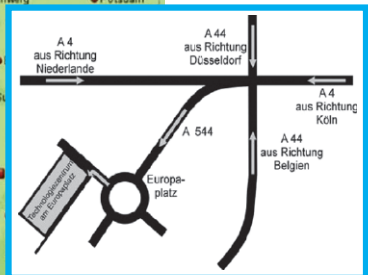
From Düsseldorf Airport. A52 → A61 → A44. Then A544 direction Europaplatz. (approx. 95 km, 1 h)

From Cologne Airport. Take the A59, then change to A599 followed by A4 towards Aachen. Then A544 direction Europaplatz. (approx. 82 km, 1 h)



Meeting address

Technologiezentrum
Europaplatz.
Dennewartstraße 25-27,
52068 Aachen,
Germany.



Travel Grants for young researchers

We especially encourage young researchers to come to the Aachen Meeting and to present your own work and to discuss all aspects of visual prosthetics with colleagues from many different disciplines and countries. To make things easier we will provide travel grants of up to 2,000 EUR for young researchers. Although it is difficult or in other words impossible to define a threshold for being young, a poorly artificial definition and limit has to be set. We feel that usually researchers younger than 40 years of age need more financial support than the older ones. We may be wrong but somehow we need a definition.

To apply for a travel grant please send a CV and a motivation letter to: pwalter@ukaachen.de

Aachen and the EUREGIO area

The city of Aachen is the most western city in Germany close to the borders of The Netherlands and Belgium. Aachen has approx. 250,000 inhabitants and the University and the University Hospital are the largest employer here in Aachen. Aachen has a long history and you can still see significant witnesses of a time long ago, such as the cathedral with its beautiful and mystic octagon and the astonishing gothic city hall. But Aachen with its important historic phase of Charlemagne today is a young and vivid town with its university and the many students from various countries in the world. RWTH Aachen University is one of the leading technical universities in Europe with a strong focus on mechanical and electrical engineering but also on information technology and natural sciences. Aachen forms a cultural, industrial and also scientific cross border triangle together with Liege in Belgium and Maastricht in The Netherlands forming the EUREGIO area. Many cooperations exist between the institutions within this area.

The Artificial Vision Meeting is set to the beginning of December. Although the weather might not be perfect – in fact it could be cold and maybe rainy – it is worth to visit the cosy Christmas Market in the city. You should try “Printen”, a local biscuit speciality with a high “addiction” potential.

Aachen is also not far away from Cologne with its huge cathedral and its several concert halls and the province capital Düsseldorf with its important art and fashion scene. You can also reach the European capitals Paris and Brussels by high speed train within a few hours.

There are also many more reasons to come and visit Aachen and we are looking forward to see you.

(Stamp)

Please
prepay

For German participants:
BARCODE-AUFKLEBER
EFN-FORTBILDUNGSNUMMER

RÜCKANTWORT

Congress-
Organisation
Gerling GmbH
Wertstraße 23
40549 Düsseldorf
GERMANY

THE INTERNATIONAL SYMPOSIUM ON VISUAL PROSTHETICS

<input type="checkbox"/> Mrs/Ms	<input type="checkbox"/> Ms	
Title	Name	First name
Institute		
Institute address		
ZIP code	Town	Country
Phone	E-Mail	
Date	Signature	

Important: Please print-type used! You will receive a registration confirmation. Cancellation of your registration has to be made via mail or via fax (+49 21 1 / 59 35 60) by 9th November, 2019. In any case an administration charge of € 22.00 has to be made. No refunds will be made after this date.

For German participants: **Bitte kleben Sie einen Aufkleber mit Ihrer Fortbildungsnummer (EFN/Barcode) auf die Vorderseite dieser Anmeldung!**

Please tick :

I am interested in this meeting. Please send me the final program

OR

I register **definitely** for **Artificial Vision²⁰¹⁹**

Lunch on Saturday, 14th December, 2019 (included in the conference fee)

yes no (please tick)

Social event:

Conference dinner (Friday, 13th December, 2019) _____ person/-s

I am a (please tick):

Regular PhD student*, resident* (*presentation of appropriate proof of status required)

Payment (please tick required method):

Bank transfer Credit card: MasterCard VISA American Express

Card No.: _____

Valid: _____ Card Validation Code (3 or 4 digits): _____

Hotel reservation:

Arrival date _____

Departure date _____

Mercure Hotel Aachen Europaplatz****

www.mercure.com

(next to the Center for Technology)

SR: € 143.00 | DR: € 168.00

incl. breakfast

Cancellation deadline: 16th October, 2019

Please tick:

Single room (SR)

Double room (DR)

Special request _____

Service and VAT (value added tax) are included in the room rate. The rooms will be confirmed by Congress-Organisation Gerling GmbH, Düsseldorf, in order of their receipt. To guarantee your requested hotel, reservations should be made as soon as possible.

Please do not reserve your hotel by phone. For cancellation and/or rebooking after confirmation an administration charge of € 22.00 will be made. In case of cancellation of the hotel reservation or if the participation is partly or fully cancelled after the indicated deadline Congress-Organisation Gerling GmbH reserves the right to charge up to 100 % of the agreed accommodation price.

**Congress-
Organisation
Gerling GmbH**

Wertfstraße 23 · D-40549 Düsseldorf
Fax: 0211 - 59 35 60