ARTIFICIAL VISION 2024

THE INTERNATIONAL SYMPOSIUM ON VISUAL PROSTHETICS

Thursday, 5th – Friday, 6th December, 2024
Aachen, Germany

INVITATION
CALL FOR ABSTRACTS
MEETING INFORMATION

RWTH AACHEN UNIVERSITY

UNIVERSITÄT DUISBURG ESSEN
Open-Minded

JÜLICH FORSCHUNGSZENTRUM

Novotel Aachen City
www.artificial-vision.org

Deadline for the receipt of abstracts:
Monday,
16th September, 2024

Dear Collegues and Friends,

it is my great pleasure to invite you all to the 2024 Artificial Vision Conference in Aachen, Germany.

Although, many wonderful ideas how to design a visual neuroprosthesis for the blind had been developed in the past and enormous work was done in many labs, institutes, and clinics around the globe, the sustainable realization of a product providing useful vision for the patients is still not achieved. Clinical trials have been performed on several products in the past with moderate to good success, but it turned out that it is extremely difficult for companies to remain well financed for continuously pursuing research, development, fabrication, service, rehab, clinical trial sponsoring, and many other aspects.

Many lessons have been learned so far and although the translation is still a big problem, the enthusiasm of many researchers to continue the quest for a better visual prosthesis is still unbroken.

The challenge, to restore vision in blind patients remained a big task, but over the years, we learned a lot about how to interface the visual system with new materials and electrode designs. We learned how to provide data and energy for high density systems and for larger implants. AI based algorithms for data processing of the visual input shortly opened new possibilities and the design of stimulus patterns based on simultaneous recording of retinal or cortical activity may also be a wonderful approach to achieve useful percepts with future implants.

Artificial Vision 2024 in Aachen, Germany is the best opportunity to discuss all these new aspects of Visual Neuroprosthetics with colleagues and friends from all over the world. This symposium is a fully-open, non-invitational conference. We encourage everyone who is working in the field of Artificial Vision or Visual Neuroprosthetics to present and discuss your work at this conference. For those of you who want to give a presentation at the conference please upload your abstract via the conference website (www.artificial-vision.org) until September, 16th, 2024

Sincerely and on behalf of the organizing committee

Dr. Peter Walter
Professor of Ophthalmology
RWTH Aachen University

The goal of the International Symposium on Visual Prosthetics - Artificial Vision 2024 - 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

Date

Thursday, December 5th, 2024, 13:00 h - 18:30 h
Friday, December 6th, 2024, 09:30 h - 16:00 h

Venue

Novotel Aachen City
Peterstraße. 66, 52062 Aachen, Germany

Homepage and Online Registration

www.artificial-vision.org

Scientific programme and further information

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Organization

Congress-**O**rganisation **G**erling GmbH
Werftstraße 23, 40549 Düsseldorf, Germany
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E-Mail: info@congresse.de, Homepage: www.congresse.de

Official Language

English

Hotel Booking

See hotel on the online registration
(www.artificial-vision.org)

Social Event

Conference Dinner
Thursday, December 5th, 2024,
19:30 h

Erholungs-Gesellschaft Aachen 1837
Reihstraße 13
52062 Aachen

ATTENDANCE FEE

Registration	Until 22th September	After 30th September	On site
International symposium attendance fee	EUR 250,–	EUR 300,–	EUR 320,–
Reduced rate for PhD students and residents*	EUR 130,–	EUR 150,–	EUR 170,–

*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 December 1st, 2024. 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: Monday, 16th September, 2024

Layout

Your abstract must not exceed 2000 letters in total (including blanks). 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 implantated 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 µV.
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. 1h) 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 Novotel Aachen City.

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
Novotel Aachen City
Peterstraße. 66
52062 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.