



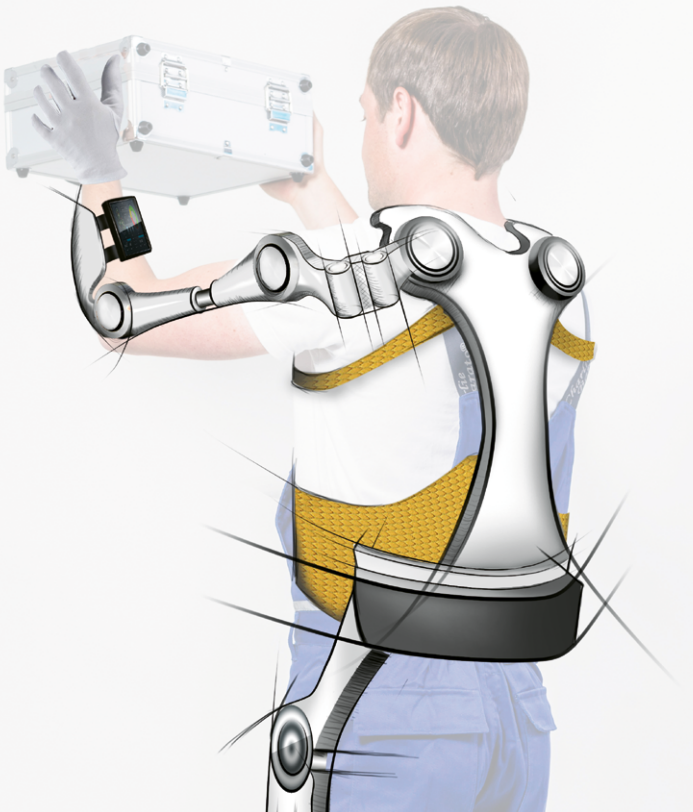
**Fraunhofer**

**IPA**

**FRAUNHOFER INSTITUTE FOR  
MANUFACTURING ENGINEERING AND AUTOMATION IPA**

**SYMPOSIUM | JULY 6<sup>TH</sup> 2015**

# **EXOSKELETONS IN MEDICINE AND AT WORK**



## PREFACE

Exoskeletons as wearable technology are in the focus of the current development to support the human through machines. They enable new forms of therapy, rehabilitation and prevention. Their fields of application range from hospitals to factories and our homes.

New challenges emerge in different sectors around the world: The emphasis is on medical applications in hospitals and during homecare. Furthermore, these technologies empower patients to lead an independent life.

Additionally, the aging population requires the use of exoskeletons at the workplace in fields such as logistics, manufacturing and healthcare. The goal is to prevent chronic diseases and to maintain a motivated workforce as well as know-how in an evolving high-tech world.

Achieving these goals requires new approaches in human-machine interaction as well as intelligent safety methods and international standardization.

For this conference we invited the leading experts in the field of exoskeletons from around the world. Their topics range from medical applications over exoskeletons at work to safety aspects of wearable machines.

Stuttgart, May 2015

Head of Institute



Prof. Dr.-Ing. Thomas Bauernhansl

## OVERVIEW

### AIM

Fraunhofer is the connecting element between industry and academia. Our role is to bring new ideas from academia to the applications of industry and society. Therefore we would like to introduce the newest developments in the field of exoskeletons to a huge variety of stakeholders, costumers and potential partners with this event.

The goal is to create new opportunities for everyone involved and to establish a regular exchange within the field of exoskeletons. As many international experts are in Stuttgart already due to the ISO Meetings, we take the chance to have such an event right before these meetings.

### TARGET AUDIENCE

As the field is still growing we have invited stakeholders from many backgrounds, countries and fields. We are convinced that a transdisciplinary variety of, for example, experts, costumers, manufactures are the optimal setting for creating a powerful, innovative and inspiring community for groundbreaking solutions. Hence this symposium is aimed at:

**Costumers:** Industrial manufacturers (e.g. automotive, machines), logistics companies (e.g. delivery services, distribution centers), hospitals, rehabilitation centers, insurers, therapists.

**Partners:** Academic researchers, components manufacturers (e.g. sensors, motors, controls), distributors, medical device manufacturer, industrial automation manufactures, investors, funding bodies.

## PROGRAM

MONDAY, JULY 6<sup>TH</sup> 2015

GENERAL CHAIR:

DR. MED. URS SCHNEIDER

from 8.30    **Registration and Coffee**

### **Welcome Speech**

9.00        Prof. Dr. Thomas Bauernhansl  
              Head of Institute, Fraunhofer IPA, Germany

### **Session 1    Keynote Speakers**

9.15        Prof. Dr. Gurvinder Singh Virk  
              University of Gävle & KTH,  
              Sweden and CLAWAR, UK

9.45        Dr. Kiyoyuki Chinzei  
              AIST, Japan

10.15       Prof. Dr. Yoshiyuki Sankai  
              Cyberdyne Inc., Japan

10.45       **Break for Refreshments**

### **Session 2    Therapy and Rehabilitation Application**

11.15       Dr. med. Urs Schneider  
              Fraunhofer IPA, Germany

11.45       Burkhard Zimmermann  
              IISART, Hocoma AG, Switzerland

12.15       Dr. Amit Goffer  
              ReWalk Robotics, Israel

12.45       **Lunch Break (Catering)**

### **Session 3    Medical Innovation & Research 1**

- 13.45      Prof. Dr. Robert Riener  
ETH Zurich & University Hospital Balgrist,  
Zurich, Switzerland
- 14.15      Dr. Jan F. Veneman  
TECNALIA Research & Innovation, Spain
- 14.45      Dr. Nicola Vitiello  
Scuola Superiore Sant'Anna, Italy
- 15.15      **Break for Refreshments**

### **Session 4    Medical Innovation & Research 2**

- 15.45      Prof. Dr. Yoji Yamada  
Nagoya University, Japan
- 16.15      Prof. Dr. Homayoon Kazerooni  
University of Berkeley, USA
- 16.45      **Short Break for Refreshments**

### **Session 5    Exoskeletons at the workplace**

- 17.00      Dr. Cota Nabeshima  
CYBERDYNE Inc., Japan
- 17.30      Prof. Dr. Carmen Constantinescu  
Fraunhofer IAO, Germany
- 18.00      Dr. Oliver Schwarz  
Fraunhofer IPA, Germany
- 18.30      **Get-Together with Dinner and live Music**

## **PROGRAM**

### **SOCIAL EVENT**

There will be a relaxed dinner event at our facility with a German beer garden atmosphere, drinks, local food and music. We encourage all participants to engage, discuss and network in a more informal manner after the sessions.

### **GENERAL CHAIR**

**Dr. med. Urs Schneider**

Head of Department Biomechatronic Systems

Head of Business Unit Medical Engineering and Biotechnology

Fraunhofer IPA, Stuttgart

### **TECHNICAL PROGRAM CHAIR**

**Dr. rer. nat. Oliver Schwarz**

Group leader Biomimetics in Medical Engineering

Department of Biomechatronic Systems

Fraunhofer IPA, Stuttgart

Phone +49 711 970-3754

[oliver.schwarz@ipa.fraunhofer.de](mailto:oliver.schwarz@ipa.fraunhofer.de)

## **GENERAL INFORMATION**

### **INFORMATION AND REGISTRATION**

Conference Office FpF | c/o Fraunhofer IPA | Karin Reinert  
Nobelstrasse 12 | 70569 Stuttgart | Germany  
Phone +49 711 970-1204 | Fax -1877  
karin.reinert@fpf.fraunhofer.de

### **ORGANIZATION**

Verein zur Förderung produktionstechnischer Forschung e. V.  
(FpF), Stuttgart

### **CONFERENCE FEE**

The conference fee is € 590,- per person.  
This fee includes the participation in all presentations, lunch  
and refreshments during the conference and at the dinner.

### **REGISTRATION**

We request online registrations to the participation with informal mail containing the participant's name, address and possibly deviating invoice address. After the registration, the invoice and further information will be sent to you.

The deadline for registration is Monday, June 29, 2015.  
Speakers are free and do not have to register.

### **CHANGE OF REGISTRATION**

A change of registration to another participant is possible.  
Please inform the conference office about the alternate participant. This service is possible at any time and free of charge.

## **CANCELLATION OF REGISTRATION**

For cancellations until 10 days before the conference we have to charge € 100,-. After this date the full participation fee is charged.

## **ACCOMMODATION IN STUTT GART**

Regio Stuttgart Marketing- und Tourismus GmbH

Phone +49 711 2228-233, -246 | Fax -251

[www.stuttgart-tourist.de/DEU/gastro/hotels\\_buchen.html](http://www.stuttgart-tourist.de/DEU/gastro/hotels_buchen.html)

Please ask for special Fraunhofer rates.

## **LOCATION**

Fraunhofer Institute | Institute Center Stuttgart (IZS)

Main Building, lecture halls A+B

Nobelstrasse 12 | 70569 Stuttgart (Vaihingen) | Germany

## **DIRECTIONS**

[www.ipa.fraunhofer.de/anfahrt](http://www.ipa.fraunhofer.de/anfahrt)



## **REGISTRATION**

Please return via Fax +49 71 1 970-1877

or via E-mail: [karin.reinert@fpf.fraunhofer.de](mailto:karin.reinert@fpf.fraunhofer.de)

Verein zur Förderung produktions-  
technischer Forschung e. V. (FpF)  
c/o Fraunhofer IPA  
Karin Reinert  
Nobelstrasse 12  
70569 Stuttgart



**Fraunhofer**  
IPA

**SYMPOSIUM**  
**JULY 6<sup>TH</sup> 2015**

**EXOSKELETONS**  
**IN MEDICINE AND AT WORK**

Fraunhofer IPA Symposium | July 6<sup>th</sup> 2015  
**Exoskeletons in Medicine and at Work**

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Last Name

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First Name

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Title

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Company

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Department

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Street/P.O. box

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ZIP code/City/Country

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Phone/Fax

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E-mail

**Registration**

Register for the Fraunhofer IPA Symposium (Organisation committee FpF)

**Exoskeletons in Medicine and at Work**

July 6<sup>th</sup> 2015  
Conference Fee € 590,-

Please pay after having received the invoice and confirmation of registration.

**Note:** According to § 26.1 German Federal Data Security Law we inform you that we will store your address in a computer file.

I acknowledge the terms and conditions indicated for registration in this brochure.

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Place/Date

.....  
Signature