

MAY 23 – 24, 2013 IN BERLIN, GERMANY

**2<sup>ND</sup> INTERNATIONAL CONFERENCE MRO**  
**MAINTENANCE, REPAIR AND OVERHAUL**  
LIFE CYCLE ENGINEERING

ANNOUNCEMENT

PARTNERS:





Prof. Dr. h. c. Dr.-Ing. Eckart Uhlmann  
Director Fraunhofer IPK

Prof. Dr.-Ing. Dr. sc. techn. Klaus-Dieter Lang  
Director Fraunhofer IZM

## Welcome to the 2<sup>nd</sup> International Conference MRO

MRO – Maintenance, Repair and Overhaul has a great impact on both business and international economics: Enterprises spend a fortune every day to cope with corrosion, wear and vandalism. Expensive products and goods with long lifespans, as are common in the energy and traffic sector, show a high economic and scientific potential for optimization. MRO processes contribute significantly to preserving resources and enhancing energy efficiency while at the same time bringing economic benefits.

The 2nd international conference in MRO – Maintenance, Repair and Overhaul invites companies, suppliers and customers from all branches dealing with and interested in MRO. Its objective is to reflect on current developments, to tap new potentials and to pave the way for a successful future. Prestigious speakers from industry and science will present innovative concepts and strategies in MRO products, concepts, technologies and condition monitoring.

We are looking forward to meeting you at the International Conference MRO in Berlin.

A handwritten signature in blue ink that reads "Eckart Uhlmann".

Prof. Dr. h. c. Dr.-Ing. Eckart Uhlmann  
Fraunhofer Institute for  
Production Systems and Design Technology IPK

A handwritten signature in blue ink that reads "Klaus-Dieter Lang".

Prof. Dr.-Ing. Dr. sc. techn. Klaus-Dieter Lang  
Fraunhofer Institute for  
Reliability and Microintegration IZM

May 23, 2013

**Top Reasons for the Conference**

- I Knowledge Transfer – Dialog – Networks**  
Maintenance, Repair and Overhaul
- I Excellent Presentations**  
of current cross-industry topics
- I Latest Strategies and Research Findings**  
from the fields of economy, science and politics
- I Professional Discussions and Networking**  
with competent partners for the exchange of experiences
- I Conference Exhibition**  
with products and services  
from companies and institutions

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**11:00 a.m. Registration Opens**

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**11:30 a.m. Welcome and Introductions**

**Prof. Dr. h. c. Dr.-Ing. Eckart Uhlmann**

Director

Fraunhofer Institute for Production Systems  
and Design Technology IPK

**Prof. Dr.-Ing. Dr. sc. techn. Klaus-Dieter Lang**

Director

Fraunhofer Institute for Reliability  
and Microintegration IZM

**Guido Beermann**

Permanent Secretary

Berlin Senate Department for Economics, Technology and  
Research

**Martin Gorholt**

Permanent Secretary

Ministry of Science, Research and Culture, Brandenburg

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**1:00 p.m. Lunch Break  
and Exhibition Opens**

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The international conference presents companies, suppliers and customers from all branches dealing with Maintenance, Repair and Overhaul. The Key-Notes will bring together leading experts to present the state and trends of MRO and industries, including challenges and opportunities for the future.

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**May 23, 2013**

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**2:00 p.m. Key-Notes**

**Commercial Engine MRO:  
Challenges and Potential Solutions**

**André Sinanian**

Managing Director & Senior Vice President  
MTU Maintenance Berlin-Brandenburg, Germany

**Rolls-Royce – Global MRO Concept**

**Andreas Linke**

Head of Engineering for Services and Repair Engineering  
Rolls-Royce Deutschland, Germany

**Innovationsmanagement@Gasturbinen -  
Cost- and Technology Roadmapping as an Enabler**

**Andreas Fischer-Ludwig**

Manager Production Gas Turbine Plant Berlin  
Siemens Energy Sector, Germany

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**3:30 p.m. Coffee Break**

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**4:00 p.m. Key-Notes**

**Inspection and Repair Technologies  
of Turbine Components**

**Stephan Fiedler**

Deputy Head Alstom Power Service Factory Berlin  
ALSTOM Power Service, Germany

**What is the Impact of  
Research and Development on MRO?**

**Ralf Thon**

Manager Plant Berlin  
MAN Diesel & Turbo, Germany

**Results of 12-month Lean Transformation in TAM MRO**

**Alvaro Augusto dos Santos Pereira, Luiz Gustavo,**

**Bruno Diniz da Gama**

TAM MRO Production Director  
TAM Linhas Aéreas S/A, Brazil

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**5:30 p.m. Poster Session  
and Exhibition**

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**7:00 p.m. Evening Networking Event**

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# CONFERENCE AGENDA

May 24, 2013



## Conference Topics in MRO-Sessions

- | MRO Products: MRO-related Design
- | MRO Processes and IT: Concepts and Applications
- | Technologies: Adaptive and Flexible MRO
- | Condition Monitoring: Intelligent MRO Systems

## May 24, 2013 **Session 1 & 3** Maintenance, Repair and Overhaul MRO

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### 9:00 a.m. Session 1

#### **MRO Processes: Concepts and Applications, IT and Condition Monitoring: Intelligent MRO**

**Chair: Dr.-Ing. Andreas Middendorf**

Fraunhofer IZM

#### **Software-aided Planning in the MRO Process in times of Industry 4.0**

**Oliver Schmidt**

Vice President Aerospace Business

Psipenta Software Systems, Germany

#### **The Future of Condition Monitoring: Prognostics Systems Using COTS Technologies**

**Lodovici Menozzi**

Business Development Manager Europe MCM

National Instruments, Italy

#### **The Prognostics Gateway – Providing an Interface between Diagnostics and Maintenance Planning**

**Kenneth Pipe & Bernadette Culkin**

Senior Simulation Engineer

Humaware, United Kingdom

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### 10:30 a.m. Coffee Break

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### 11:00 a.m. Session 3

#### **MRO Products: MRO-related Design, Technologies: Adaptive and Flexible MRO**

**Chair: Dr.-Ing. Andreas Middendorf**

Fraunhofer IZM

#### **Controlled Shot Peening for Power Generation Industry**

**Frank Heide**

Sales Manager, Metal Improvement Company, Germany

#### **Rolls-Royce On-wing Care:**

##### **Challenges Associated with On-wing Maintenance**

**Tom Danvers**

Rolls-Royce, United Kingdom

#### **Technical Diagnosis of High-speed Trains – Potentials in the Use of Diagnostic Data for Life Cycle Management and Maintenance of High-speed Train Fleet**

**Siegfried Krähahn**, Deutsche Bahn Fernverkehr, Germany

**Claudio Geisert**, Fraunhofer IPK, Germany

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### 12:30 a.m. Lunch Break & Exhibition

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#### **1:30 p.m. Panel Discussion: Research vs. Industry**

**Chair: Prof. Dr.-Ing. Christian Oliver Paschereit**, TU Berlin

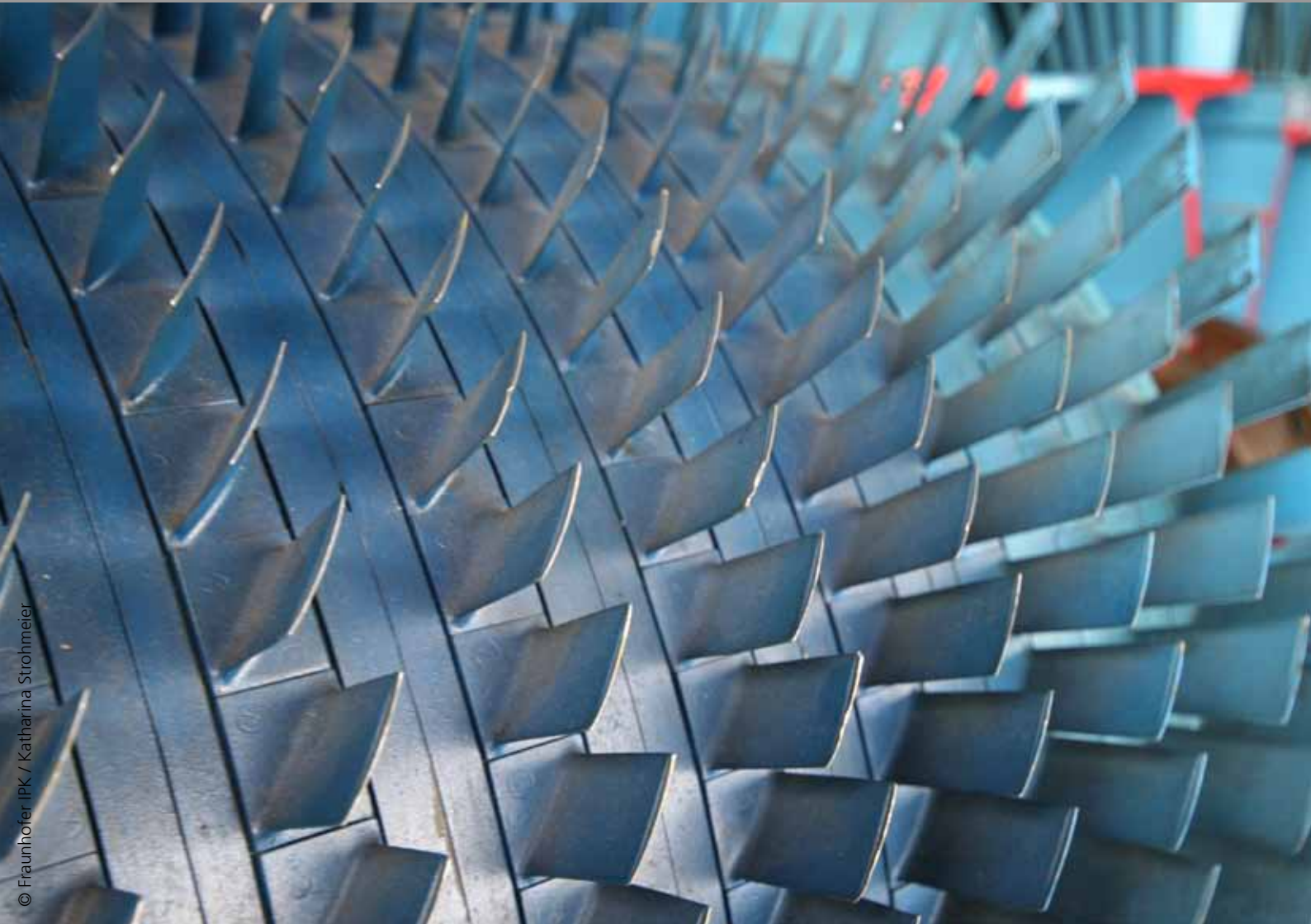
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### 3:00 p.m. End of Conference and Exhibition

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# CONFERENCE AGENDA

May 24, 2013





## Conference Topics in Sessions focussing on Turbomachines

- | Product Strategies
- | Digital Modelling and Information Management
- | Life Cycle Monitoring
- | Processing Technologies

## May 24, 2013 Session 2 & 4 MRO focussing on Turbomachines

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**9:00 a.m. Session 2:**  
**Product Strategies,**  
**Digital Modelling and Information Management**  
**Chair: Martin Bilz,** Fraunhofer IPK

**Turbomachine Development:**  
**Aerodynamics, Design, Analysis and Manufacturing**  
**Dr.-Ing. Bart van Duikeren**  
Florida Turbine Technologies, USA

**Towards Detection**  
**of Engine Defects by Analyzing the Exhaust Jet**  
**Rafael Adamczuk**  
Institute of Turbomachines and Fluid Dynamics,  
Leibniz Universität Hannover, Germany

**Interactive Aerodynamic Design**  
**in a Virtual Environment with R&O Aspects**  
**Prof. Dr. Marius Swoboda**  
Head of Design Systems Engineering  
Rolls-Royce Deutschland, Germany

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**10:30 a.m. Coffee Break**

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**11:00 a.m. Session 4:**  
**Life Cycle Monitoring,**  
**Processing Technologies**  
**Chair: Martin Bilz,** Fraunhofer IPK

**Condition Monitoring on Turbomachines -**  
**Experiences, Developments, Samples**  
**Dr. Edwin Becker**  
Head of Service & Diagnostic Center  
Prüftechnik, Germany

**Jet Engine Cleaning Using CO<sub>2</sub> Dry Ice**  
**Holger Appel**  
Project Manager Innovation  
Lufthansa Technik, Germany

**Additive Processes and Certification - the Materials Perspective**  
**Gerrit A. Kool**  
Senior R&D Manager  
National Aerospace Laboratory – NLR, Netherlands

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**12:30 a.m. Lunch Break & Exhibition**

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**1:30 p.m. Panel Discussion: Research vs. Industry**  
**Chair: Prof. Dr.-Ing. Christian Oliver Paschereit,** TU Berlin

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**3:00 p.m. End of Conference and Exhibition**

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## HIGHLIGHTS

### **Evening Networking Event on the Waterways of Berlin**

To conclude the first day of the conference, we invite all participants to our evening event on May 23, 2013. Amidst the conference networking dinner, we offer you an exclusive setting to establish contact with new business partners or to intensify the conversations of the first conference day with speakers, participants and exhibitors. Please be our guest and discuss with experts from industry and research about chances, challenges and mutual goals in the field of MRO. You are invited to join us on a sightseeing tour through Berlin's waterways obtaining a new perspective on this city.

### **Poster Session**

Scientists and representatives of the business community present their research, projects and practices.

### **Exhibition**

The conference will be accompanied by an exhibition. Visit the exhibition or become an exhibitor at the International Conference MRO – Maintenance, Repair and Overhaul. Establish new business relations, cultivate networks, and obtain first-hand, up-to-date market information.

### **Sponsoring**

Present your company as a sponsor at the International Conference MRO for effective advertising plus marketing performance. Your benefits:

- ▮ Contact and access to top managers and the community
- ▮ Positioning of your company in the framework of decisionmakers
- ▮ Increased awareness level of your company as a sponsor of the International Conference MRO
- ▮ Attract attention before, during and after the event

With the exhibition at the Fraunhofer-Forum Berlin, we offer you a professional platform for the presentation of your company or institution. Take this opportunity to display your services, research findings or products in the context of the conference.

### **Become a Sponsor**

If you would like to present your products and your company, please contact us for further information about sponsoring opportunities and exhibition.

# EVENT LOCATION

## Venue

### **Fraunhofer-Forum Berlin in Spreepalais**

Anna-Louisa-Karsch-Str. 2  
10178 Berlin  
Germany

## Travel Information

### **Hauptbahnhof, Zoologischer Garten and Friedrichstraße:**

S-Bahn lines S5, S7, S75, S9 to the Hackescher Markt.

### **Ostbahnhof and Alexanderplatz:**

S-Bahn lines S5, S7, S75, S9 to the Hackescher Markt.

Leave the station towards Burgstraße/Museumsinsel. At the Burgstraße go towards the cathedral as far as the Anna-Louisa-Karsch-Strasse and cross the street. The main entrance of the Spreepalais is 20 m along the road on the left-hand side.

For hotel recommendations and further information please visit our website [www.conference-mro.com](http://www.conference-mro.com).

## Berlin

The Fraunhofer-Forum Berlin in the Spreepalais is situated in the center of Berlin at the river Spree. Berlin is among the largest and most diverse regions for science in Europe and has the greatest concentration of universities and institutional research facilities in Germany.



# FRAUNHOFER INNOVATION CLUSTER MRO

Fraunhofer innovation clusters focus on the cooperation between the fields of science, economics and politics to secure a long-term partnership and enhance the exchange of knowledge within a region. The goal of the Fraunhofer innovation cluster »Maintenance, Repair and Overhaul (MRO) in Energy and Transport« is to introduce and establish resource-protecting and energy-efficient MRO processes and technologies on a permanent basis in the capital region of Berlin/Brandenburg. The financial resources available to the cluster – more than € 16 million – is provided over a period of three years by the Fraunhofer-Gesellschaft, the states of Berlin and Brandenburg and the participating companies, with each of these groups financing roughly a third of this sum within the context of various projects.

## Research Institutes

- | Fraunhofer Institute for Production Systems and Design Technology
- | Fraunhofer Institute for Reliability and Microintegration
- | Institute for Land and Sea Transportation, TU Berlin
- | Aerospace Institute, TU Berlin
- | Institute for Machine Tools and Factory Management, TU Berlin
- | Federal Institute for Materials Research and Testing
- | Brandenburg University of Technology Cottbus

## Industrial Companies

- | Airbus
- | Alstom Power Service
- | Amovis
- | Berliner Stadt-  
reinigungsbetriebe
- | Berliner Verkehrsbetriebe
- | DB Mobility Fernverkehr
- | Fuss EMV
- | Havelländische Eisenbahn
- | Hegenscheidt-MFD
- | Heidelberger Druckmaschinen
- | MAN-Turbo
- | MTU Maintenance
- | Rolls-Royce Deutschland
- | Siemens Energy Sector





## FRAUNHOFER IPK

The Fraunhofer Institute for Production Systems and Design Technology IPK conducts applied research and development on future-oriented technologies for production processes in factories. Furthermore, its activities are extending into new areas of application in the flourishing fields of medical technology, service robotics, traffic management, globalization management, virtual product and process development, product manufacturing, process control and optimization, and safety, security and testing systems.

The Institute's work is focused on methods and processes to improve productivity in product development and manufacture and convert these methods and processes into system solutions. This includes the conception and implementation of intelligent production tools and their integration into complex production plants.

Fraunhofer IPK has a permanent staff of roughly 306 people. To fulfill its research contracts, the Institute uses more than 9 500 m<sup>2</sup> with offices, laboratories and testing facilities.

## FRAUNHOFER IZM

Invisible – but indispensable – nowadays nothing works without highly integrated microelectronics and microsystem technology. Reliable and costeffective assembly and interconnection technologies are the foundation of integrating these in products. Fraunhofer IZM, a worldwide leader in the development and reliability analysis of electronic packaging technologies, provides its customers with tailor-made system integration technologies on wafer, chip and board level. Our research also ensures that electronic systems are more reliable, so that we can accurately predict life-cycle.

Fraunhofer IZM has seen a great deal of success since its founding in 1993 from research groups of the Research Center for Microperipheric Technologies at the TU Berlin, the Humboldt-Universität Berlin and what used to be the Institute for Mechanics at the Akademie der Wissenschaften in Chemnitz. By now, more than 200 employees are engaged in research and development at four locations in Berlin, Dresden, and Oberpfaffenhofen.

REGISTER NOW AND BENEFIT  
FROM THE EARLY RATE UNTIL  
APRIL 10, 2013

## REGISTRATION

### Conference Fees

	Early Rate Until April 10, 2013	Normal Rate From April 11, 2013
Only for MRO-Partners	EUR 300	EUR 300
Standard Rate	EUR 480	EUR 550
1-Day-Ticket Thursday		EUR 350
1-Day-Ticket Friday		EUR 300

Standard Rate Registration includes all conference sessions, access to the exhibition, conference bag, program, conference dinner, technical tour, all lunches and refreshments daily. Fees for scientific events are without value added tax (VAT).

Please register by e-mail, fax or fill out the following registration form. Registration form is also available on: [www.conference-mro.com](http://www.conference-mro.com).

### Cancellation

Cancellations of a confirmed participant will be charged with an administrative fee of EUR 80,00 until April 10, 2013. After April 11, 2013 there will be no refund.

### Venue

Fraunhofer-Forum Berlin  
in Spreepalais  
Anna-Louisa-Karsch-Str. 2  
10178 Berlin  
Germany

### Languages

Conference languages are English and German (translation provided).

### Travel Information

For hotel recommendations and further information please visit our website [www.conference-mro.com](http://www.conference-mro.com).

# REGISTRATION

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Fraunhofer Institute for Production  
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Pascalstr. 8 - 9  
10587 Berlin

**Hereby I am registered for the International Conference MRO.**

## Conference Fees

- Only for MRO-Partners € 300
- From April 11, 2013 € 550

(Fees for scientific events are without value added tax (VAT))

## One-Day-Ticket

- May 23, 2013 € 350
- May 24, 2013 € 300

## Session on May 24, 2013

- MRO
- Turbomachines

## Evening Event on May 23, 2013

- Evening Event  
on the Waterways of Berlin

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Last Name

First Name

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Business

Department, Position

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Address

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VAT-Number

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Phone

Fax

E-Mail

I herewith agree that my personal data can be electronically stored by the organizers. They will not be transferred to a third party. I also agree with the publication of my personal data in the participants directory of the the International Conference MRO.

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City / District, Date, Signature (if sent per E-Mail the registration form is effective without signature)

# CONTACT

## **Fraunhofer Innovation Cluster MRO in Energy and Transport**

c/o Fraunhofer Institute for Production Systems and Design Technology IPK

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<http://www.ipk.fraunhofer.de>

### **Director**

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Phone: +49 30 39006-100

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**PLEASE VISIT OUR WEBSITE: [WWW.CONFERENCE-MRO.COM](http://WWW.CONFERENCE-MRO.COM)**