

IPAS 2020

9th International Precision Assembly Seminar

SCIENTIFIC & SOCIAL PROGRAMME



15-17 March 2020 / Kitzbühel, Austria

Organised by



**University of
Nottingham**
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SUNDAY 15 TH MARCH 2020	
19:30	WELCOME RECEPTION – Hotel Kaiserhof
MONDAY 16 TH MARCH 2020	
08:00	REGISTRATION - KitzKongress
08:30	WELCOME Svetan Ratchev, Director of the Institute for Advanced Manufacturing at The University Of Nottingham, UK
08:40	WELCOME Christian Wögerer, Coordinator International Networks at Profactor GmbH, Austria
08:50	KEYNOTE ADDRESS Gino Dini - Professor of Manufacturing and Production Engineering, University of Pisa, Italy
09:30	KEYNOTE ADDRESS Peter Reichel - Austrian Electrotechnical Association (OVE); Austrian Measurement, Automation & Robotics Association (GMAR), Austria
10:10	BRUNCH
10:40	ASSEMBLY DESIGN AND PLANNING <i>Session Chair: Dr Marek Franaszek</i> Application of a Standardized Design Procedure in the Development of Automated Micro-Assembly Processes <i>Tobias Müller; Gordon Saunders</i> Towards the Automated Coverlay Assembly in FPCB Manufacturing: Concept and Preliminary Tests <i>Marcello Valori; Vito Basile; Simone Pio Negri; Paolo Scalmati; Chiara Renghini; Irene Fassi</i> Resource Interface Matchmaking as a Part of Automatic Capacity Matchmaking <i>Niko Sitala; Eeva Järvenpää; Minna Lanz</i> Investigation on the Convergence of the Genetic Algorithm of an Aerodynamic Feeding System due to the Enlargement of the Solution Space <i>Torge Kolditz; Caner-Veli Ince; Annika Raatz</i>
12:00	END OF MORNING SESSION
17:00	<div>HUMAN CENTRED ASSEMBLY <i>Session Chair: Dr Andreas Pichler</i> Assistance Needs in Production Environments: A Contextual Exploration of Workers' Experiences and Work Practices <i>Thomas Meneweger, Verena Fuchsberger, Cornelia Gerdenitsch, Sebastian Egger-Lampl, and Manfred Tscheligi</i> Automated Information Supply of Worker Guidance Systems in Smart Assembly Environment <i>Gerhard Reisinger, Philipp Hold and Wilfried Sihl</i> Towards Human and Robot Collaborative Ergonomic Handling of Long Parts with a Loose Grip <i>Michael Hofmann, Markus Ganglbauer Plasch Matthias, Christian Wögerer, and Andreas Pichler</i></div> <div>ASSEMBLY OPERATIONS <i>Session Chair: Dr David Sanderson</i> Improving Automated Insertion Task in Robotics by Reducing Registration Error <i>Marek Franaszek; Geraldine S. Cheok; Karl Van Wyk; Jeremy A. Marvel</i> Application of Advanced Simulation Methods for the Tolerance Analysis of Mechanical Assemblies <i>Konstantinos Bacharoudis; Atanas Popov; Svetan Ratchev</i> Strategies for Dealing with Problems in Robotised Unscrewing Operations <i>Jun Huang; Duc Truong Pham; Ruiya Li; Kaiwen Jiang; Dalong Lyu; Chunqian Ji</i></div>
18:00	COFFEE BREAK
18:20	HUMAN CENTRED ASSEMBLY Cont. Attention Analysis for Assistance in Assembly Processes <i>Lucas Paletta</i> Usability Study of CNN-based Pose Estimation of Industrial Objects from Synthetic Depth Data <i>Stefan Thalhammer, Timothy Patten, and Markus Vincze</i> Situation Awareness for Shop Floor Assistance <i>Wernher Behrendt, Felix Strohmeier</i>
19:30	END OF SESSIONS
20:00	Seminar Dinner – Hotel Kaiserhof

TUESDAY 17 TH MARCH 2020	
08:30	KEYNOTE ADDRESS Gerald Fritz - Senior Coordinator R&D Projects, TTTech Computertechnik AG, Austria
09:10	ASSEMBLY CELLS AND SYSTEMS Session Chair: Prof Minna Lanz Development of a Sensitive Winding Application Based on a Serial Robot and Integrated Torque Sensors <i>A. Kanso; R. Müller; M. Vette-Steinkamp</i> Development of a Low-Cost, High Accuracy, Flexible Panel Indexing Cell with Modular, Elastic Architecture <i>Robert Brownbill; Adam Roberts</i>
09:50	COFFEE BREAK
10:20	ASSEMBLY CELLS AND SYSTEMS Cont. Context-Aware Plug and Produce for Robotic Aerospace Assembly <i>David Sanderson; Emma Shires; Jack Chaplin; Amer Liaqat; Svetan Ratchev</i> Data Capture and Visualisation on a Shoestring: Demonstrating the Digital Manufacturing on a Shoestring Project <i>Michael J. McNally; Jack C. Chaplin; Giovanna Martínez-Arellano; Svetan Ratchev</i>
11:00	BRUNCH - END OF MORNING SESSION
17:00	<div> <div> HUMAN CENTRED ASSEMBLY Session Chair: Dipl. Ing. Christian Wögerer, MSc Live Video Assistance Systems for Assembly Processes <i>Kittl Christian, Streibl Markus</i> Human and Workcell Event Recognition and its Application Areas in Industrial Assembly <i>Matthias Plasch, Sharath Chandra Akkaladevi Michael Hofmann, Christian Wögerer, and Andreas Pichler</i> Safety as Bad Cop of Physical Assistance Systems? <i>Michael Rathmair and Mathias Brandstötter</i> </div> <div> ASSEMBLY CELLS AND SYSTEMS Session Chair: Dipl.-Ing. Tobias Müller Digital Innovation Hubs – Aims to Enhance the Technology Transfer and Digital Transformation of the European Manufacturing Industry <i>Minna Lanz; Jyrki Latokartano; Roel Pieters</i> Plenoptic Inspection System for Automatic Quality Control of MEMS and Microsystems <i>Moritz Kirschmann; Jörg Pierer; Alexander Steinecker; Philipp Schmid; Arne Erdmann</i> </div> </div>
18:00	COFFEE BREAK
18:20	HUMAN CENTRED ASSEMBLY Cont. Acceptance of a Cognitive Assistive Technology for Maintenance and Assembly <i>Cornelia Gerdenitsch, Lisa Deinhard Bettina Kern, Philipp Hold, and Sebastian Egger-Lampl</i> The Consideration of Job Satisfaction in the Design of Assistance Systems in Production <i>Stelios Damalas, Norah Neuhuber, and Peter Moertl</i>
19:15	CLOSE OF SEMINAR
19:45	OPTIONAL EVENING MEAL

The seminar will take place in **KitzKongress**.
The international conference centre situated in the heart of Kitzbühel next to the
Hahnenkamm cable railway.
KitzKongress was awarded the Austrian Ecolabel for "Green Meeting" and "Green Events".



Josef-Herold-Straße 12
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The *Welcome Reception* and *Seminar Dinner* will be held at the **Hotel Kaiserhof**.
A beautiful, traditional style hotel "at the foot of the most famous ski racetrack in the world".

Dress code for both evenings: *smart casual*



Hahnenkammstrasse 5,
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KITZBÜHEL



We are delighted to be hosting this year's IPAS seminar in the old mining town of Kitzbühel. This charming place owes much of its stunning architectural heritage to the local artist Alfons Walde, whose artwork can be seen in the Kitzbühel Museum.

Situated on the Kitzbüheler Ache River, Kitzbühel is only 120km from Munich, 95km from Innsbruck and 80km from Salzburg. The town's centre is mostly car-free, and has a large selection of elegant shops and cafés.

In March, the average snowfall is 35.6cm, temperatures reach highs of 8.7C and lows of -6.3C, *so do not forget to bring your warm clothes!*



ADDITIONAL ACTIVITIES

For those of you who would like to take advantage of the snow in your spare time and go skiing or snowboarding, we are fortunate that the KitzKongress is a stone's throw away from the famous Hahnenkamm slope.

Hahnenkamm slope **opening times:**

- Open 08:00
- Closes 16:00

Ski passes can be bought from the Front Office of the **Hotel Kaiserhof**. You can also **buy passes online:** <https://www.kitzski.at/en/tickets-prices/tariffs-winter/day-ticket.html>

If you need to **rent ski equipment:** <https://www.kitzbuehel.com/en/skiing/skiverleih-skiservice/>



SEMINAR ORGANISATION

Seminar Co-Chairs

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