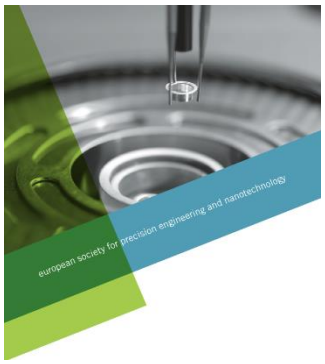

Special Interest Group:

Micro/Nano Manufacturing

28th - 29th November 2023

Technische Universität Ilmenau/
SIOS Messtechnik GmbH
Ilmenau
Germany

euspen

Dear delegates,

We very much look forward to welcoming you to eu**spen**'s Special Interest Group meeting on Micro/ Nano Manufacturing which will take place at Technische Universität Ilmenau in Germany from Tuesday 28th – Wednesday 29th November 2023.

To help you with your planning, we have provided a summary of key information for the meeting.
For any questions, please contact info@euspen.eu.

Meeting Location

Address:
Technische Universität Ilmenau
Meitnerbau
Gustav-Kirchhoff-Straße 5
98693 Ilmenau

Click on campus map to expand image

Further information can be found on the venue, travel and social **webpage**.

Please note, the "Principles of high-precision nano positioning" tutorial and laboratory tour will be held in a different building. Tutorial information can be found on the next page.

Registration

Registration will take place on **Tuesday 28th November** from **12:15 – 13:00**. Upon registering you will be given your delegate badge and meeting programme. We kindly request that you return your delegate badge at the end of the meeting.

Please note, consumption of food and drink is **not** permitted in the plenary/auditorium.

Tutorial

The “Principles of high-precision nano positioning” tutorial given by Dr.-Ing. Denis Dontsov from SIOS Meßtechnik GmbH, DE will take place on **Tuesday 28th November** from **08:30**. A tour of the Nano-position labs of TU Ilmenau will follow the tutorial.

Please note, the tutorial will be held at the following location:

Address:
Ernst-Abbe-Zentrum
Ehrenbergstraße 29
98693 Ilmenau

Programme

The full meeting **programme** is available on the event webpage and a summary of the day’s events are detailed below. Please note that all times are shown in Central European Time (CET).

Date	Programme Summary	Time (CET)
Tuesday 28th November	**Tutorial:** Principles of high-precision nano positioning **Laboratory Tour**: Nano-position Labs of TU Ilmenau	08:30 – 11:30
Tuesday 28th November	**Meeting: Day 1** - Keynote, State-of-the Art & oral presentations - Discussion sessions - Industry Presentations - Networking dinner	13:00 – 17:35 18:30 – 21:30
Wednesday 29th November	**Meeting: Day 2** - Keynote, State-of-the Art & oral presentations Discussion sessions - Poster session	08:30 – 15:50

Keynotes

Keynotes		
Tuesday 28th November **13:20 – 13:50**		**Prof. Dr. Steffen Strehle** *Technische Universität Ilmenau, DE* **“New perspectives in 3D micro-nanostructuring through the use of focused electron beams”**
Wednesday 29th November **08:30 – 09:00**		**Dr Christof Pruss** *University of Stuttgart, DE* **“Trends and challenges in microoptics”**

State-of-the-Art Reviews

State-of-the-Art Reviews	
Tuesday 28th November **15:50 – 16:15**	 **Dr Timo Eppig** *AMIPLANT GmbH, DE* **"Challenges in modern intraocular lens manufacturing – from mass production to made-to-order"**
Wednesday 29th November **12:50 – 13:15**	**Dr Martin Ehrhardt** *Leibniz Institute of Surface Engineering (IOM), DE* **"Beam-based ultra-precise surface processing"**

Oral Presentations

A detailed timetable of all oral presentations can be found on the meeting **programme**. Questions will be taken during the discussion sessions.

Discussion Sessions

The discussion sessions will be an opportunity for delegates to ask the oral presenters questions and enter into open discussion around state-of-the-art practice, key research, and developments. These sessions will be facilitated by the oral session chair.

Poster Session

The poster session will take place on **Wednesday 29th November** from **10:50 – 11:50**. At the beginning of this session each poster presenter will give a 4-minute presentation of their poster, to give delegates an understanding about the subject matter and the principal conclusion.

Once the oral presentations have finished poster presenters will position themselves next to their posters giving delegates an opportunity ask questions and view the A0 posters.

Poster presenters, you will find your poster number on the meeting **programme**.

Networking Dinner

The evening networking dinner will be held on **Tuesday 28th November** from **18:30 – 21:30** at the Hotel Gabelbach.

Address: Hotel Gabelbach, Am Gabelbach 1, 98693 Ilmenau

Coach transport to the Networking dinner will be provided. The coach will leave the Thermotechnical Institute at **18:00**. Return coach transport will also be provided. Delegates be given the opportunity to be dropped off at one of the following locations.

1. Central Bus Station, 98693 Ilmenau, Germany (near Hotel Mara)
2. University Library, Langewiesener Straße 37 Leibnizbau, 98693 Ilmenau, Germany (near ILM Hotel)

Please check prior to the networking dinner which drop off point is closest to your accommodation.

Abstracts

All abstracts can be accessed via the proceedings section of the eu**spen** **knowledge base**. Please select 'SIG Micro Manufacturing' from the event drop down to access these documents.

Exhibitors

We are extremely grateful to our exhibitors who are sponsoring and supporting this event.

The exhibition will be open throughout the event. We encourage delegates to visit our exhibitors to find out more about the latest advancements and technologies.

A dedicated Industry session will take place on **Tuesday 28th November** at **15:40** for exhibitors to give a 5-minute presentation about the company and its capabilities.

Exhibitors	
Polytec GmbH	For more than 50 years and with almost 500 employees worldwide, the high-tech company Polytec has been developing, producing and selling optical measurement technology for research and industry. This includes systems for vibration measurement, surface characterization, length and speed measurement, process analytics and optical systems. Optical 3D surface measurement systems from Polytec operate in a non-contact and area-based manner in both the micro and macro range. Polytec is also part of the "Fair Data Sheet" initiative and involved in ISO activities for surface metrology. Visit our website for additional information, **www.polytec.com**.

SmalTec International	SmalTec International is a leading micro machine manufacturer, specializing in micro-EDM (electro discharge machining). Based in the Chicago Area, SmalTec manufactures high and ultra-high precision equipment used in a variety of industries; i.e., medical, aerospace, communications, automotive, university research and others. We offer a prototyping service for our customers. During this phase we work with customers to complete proof or process and many times products. We are engaged from the R&D phase to light production. Providing a turn key solution, many of our Prototype customers purchase the equipment and begin production in their own facilities.
	Technology capabilities …
	• Very tight motion tolerances (100 nanometers on the EM203 or 1 nanometer on the GM703)
	• 3d coordinated motion of up to 4-axis simultaneously (developing a 5th axis at this time)
	• Small holes to 3um diameter (with repeatable results)
	• Inside corner radius of 2.5 um (if necessary)
	• Spark sizes down to 0.25 um for machining
	  ○ Achieving a 40nm R_{max} with EDM
	  ○ 5nm Ra with PCD
	• On machine tool making/shaping capability
	• Small hole / high aspect ration capability (10:1 at 5um | 20:1 at 40 um | 35:1 at 50 um | 40+:1 at 100 um
	• Versatile equipment capable of utilizing a variety of standard tooling; i.e. drilling milling, polishing, grinding.
	  ○ High Speed Spindle Machining (180,000 RPM)
	• On machine automated part detection, location and verification
	• In situ micro metrology utilizing our patented Micro Probe System
	
	Visit our website for additional information, **www.smaltec.com**. We look forward to discussing your micro feature challenges.

On behalf of the eu**spen** team and the organising committee, we wish each of you a pleasant and safe journey and look forward to meeting in Germany.