

Photonics4MedTech - Manufacturing & Smart Assembly

Scalable precision for medical technology in 2026.

Workshop topic

The future of medical technology will be decided not only in the laboratory, but also in the scalability of systems. Highly complex optoelectronic assemblies – from intelligent pipette heads to autonomous diagnostic workstations – are placing new demands on next-generation manufacturing technologies.

Photonic technologies play a central role in this context – both in precise material processing and microstructuring, as well as in the integration and automated assembly of complex systems. Laser-based manufacturing processes, photonic micro- and nanostructuring, and optical inspection and sensing systems enable new approaches in the production of medical components, ranging from implants and microfluidic diagnostic systems to highly precise optoelectronic assemblies.

We take an exclusive look at the interface between photonics, material processing, robotics, and industrial assembly for medical technology, focusing on topics such as robot-guided assembly, vision-guided automation, optoelectronic integration, and the transition from prototype to autonomous production lines.

This event brings together experts from science and industry to discuss the future of medical technology manufacturing and to identify innovation potential. Participants will gain insights into state-of-the-art technologies and learn how innovations, particularly in photonic material processing and intelligent manufacturing, can be translated into efficient and scalable MedTech production.

- The event **starts with a workshop** including keynote presentations, networking breaks, and a joint lunch **at FHGR in Chur**.
- Following the workshop in Chur, an **organized bus transfer** will take participants **to Hamilton Instruments in Bonaduz** for an exclusive factory tour followed by a closing apéro.
- The event **ends at Hamilton Instruments in Bonaduz**. Participants are responsible for arranging their own onward journey, either back to FH Graubünden or directly home.

Date / Location

Date: Thursday, 10. Sept. 2026

Duration: 10 a.m. – 6 p.m.

Location: First part of the event: FHGR, Pulvermühlestrasse 57, 7000 Chur

Second part of the event: Hamilton Bonaduz AG, Via Crusch 8, 7402 Bonaduz

Target audience

This workshop will be a forum for participants from industry and research to share their experiences and discuss challenges and perspectives of current and future applications.

Cost

This workshop is free of charge

Registration compulsory

[\[LINK\]](#), Registration Deadline: 27. Aug. 2026

Language

English preferred

Organized by the University of Applied Sciences of the Grisons, Hamilton Instruments, Swissmem Industry Sectors Photonics and Medical Manufacturing and Swissphotonics

Time	Presentation & Topic
9:30 h	Registration, Welcome Coffee
10:00 h	Welcome to the University of Applied Sciences of the Grisons Armando Schär, FH Graubünden
10:10 h	Introduction to the Workshop by the organizers
10:20 h	Keynote: Lasers as an Indispensable Tool in Manufacturing: Ablation, Joining, Forming, and Surface Functionalization Konrad Wegener, Inspire
10:45 h	Laser Applications in Medicine and Medical Technology Ronald Holtz, FHNW
11:00 h	Intelligent Solutions for Low- and Medium-Volume Laser Welding: Limitations and Future Needs Rafaël Tobler, MPS Micro Precision Systems
11:15 h	Coffee Break, 30 min
11:45 h	Closed-Loop Nano-Pipetting with Inline Optical Sensing Nils Lass, Hamilton Freiburg
12:00 h	Precision Measurement in Low-Volume and Microfluidic Systems with Lock-in Thermal Imaging Mathias Bonmarin, ZHAW & NanoLockin
12:15 h	MedTech Photonics Markus Lützel Schwab, Microdul
12:30 h	CoBooster: Collaborative Innovation Plattform Joëlle Tosetti, CoBooster
12:45 h	Lunch Break, 60 min
13:45 h	Precision Automation for Medical Device Assembly - Current Challenges and Future Requirements Fernando Cazzato, Stäubli Robotics
14:00 h	From pixels to motion: Vision for agile robotics Francesco Crivelli, CSEM
14:15 h	Robotic Drug Delivery Capsules Enabled by Infrared Activation Vivek Subramanian, EPFL
14:30 h	Bus Transfer Chur → Hamilton Bonaduz AG
15:00 h	Tour Hamilton Instruments & Hamilton Production Site (Tour in Groups)
17:00 h	Networking Apéro in Hamilton's Green Senses Cantina