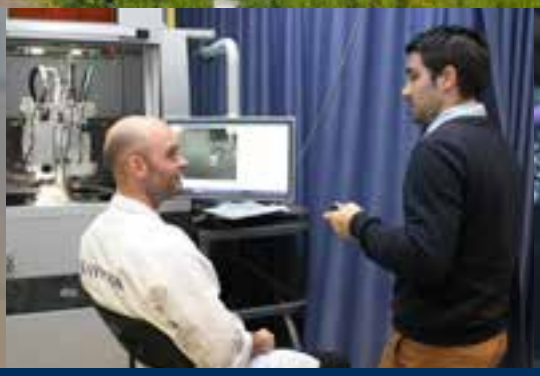


Company Profile

SYNOVA

Cool Laser Machining

www.synova.ch


SYNOVA
MCS300
LCS 300

Innovative Laser Machining Systems

Synova is the pioneer of a revolutionary water jet guided laser technology providing state-of-the-art cutting and dicing solutions as well as drilling and edge grinding systems for the energy, aerospace, tool, diamond, semiconductor, watchmaking, electronic, automotive and medical industries.

All Synova systems are based on our patented Laser MicroJet® technology and include:

- Laser Cutting System (LCS)
- Metal Cutting System (MCS)
- Diamond Cutting System (DCS)
- Laser Dicing System (LDS)
- Laser MicroJet® Integration Package (LMJ-iP)

The Synova Story

FROM START-UP TO GLOBAL COMPANY

Synova's story begins with the invention of the water jet guided laser developed in the 1990s at the Federal Institute of Technology (EPFL) in Lausanne, Switzerland. This innovation resolved a number of well-known problems associated with existing cutting technologies in industrial applications. Consequently, Synova was founded in 1997 in Lausanne to make the patented Laser MicroJet (LMJ) technology available to high-tech industrial manufacturers.

Since 1998, various industries worldwide have switched to this laser process for their production needs. In addition, the particular advantages have led to a number of new applications such as in the domain of sensitive material processing where Synova was the first company to introduce the laser into semiconductor wafer dicing in 2001.

Starting in 2003, the company established wholly owned local subsidiaries in the USA, Japan, India and Korea for optimized customer support. These have since been expanded to include micro-machining centers (MMCs) with Taiwan and China planned for the future.

Synova presently has 75 employees including 35 engineers focused primarily on researching new material cutting solutions, further applications and laser cutting equipment. Aside from research, both the final assembly and testing of up to 100 machines a year are performed in Synova's modern, 2000 square meter facility in Duillier, halfway between Geneva and Lausanne.

In 2010 Synova successfully entered the gem diamond cutting business. Subsequently, the company was strategically re-organized according to market segments forming three distinct business units: Diamonds, Semiconductors and Metal Industry.

Synova has established several partnerships with leading industrial machine manufacturers such as Makino for the production of LMJ machines. The company also cooperates with respected research institutions, universities and industry players on strategic projects to further the technology, including the Fraunhofer ILT and IPT, EMPA and Carl Zeiss Jena.

Synova is now a company with global reach focused on delivering high quality solutions and services to its customers wherever they are. We strongly believe that the motor of our success and growth are our technology, experience and dedication to our customers, today and tomorrow.

Timeline

1997
- Foundation of Synova S.A.
- Numerous awards for LMJ breakthrough

1993
Invention of the water jet guided laser technology (LMJ) at the EPFL in Switzerland

2001
Introduction of Laser Dicing System (LDS) for electronics and semiconductor industry and Laser Cutting System (LCS)

2003
- First Laser Stencil (LSS) and Edge Grinding Systems (LGS)
- Relocation of headquarters to Ecublens-Lausanne, Switzerland

2006
Beginning of global expansion efforts with implementation of micro-machining centers (MMCs) for customer application tests

2007
Extension of existing business model through technology licensing partnerships and LMJ Integration Package (LMJ-iP)

Awards

2014 Laser MicroJet recognized as one of "World's Most Amazing Breakthroughs in Science & Technology" – *McGraw-Hill Yearbook of Science & Technology, U.S.A.*

2007 Second Best Tool for Wafer Processing – *EuroAsia IC Industry*

2005 European Award for Technology Innovation – *Frost & Sullivan*

2004 Entrepreneur of the Year 2004 (Finalist) – *Ernst & Young*

1997 Förderpreis Technopark Zürich – *Technopark Zürich*

1997 Technologiestandort Schweiz – *OSEC, Swiss Center for Trade Promotion*

1997 Sonderpreis Espace Mittelland – *Cantons of Central Switzerland*

1996 KTI-Label – *Swiss Innovation Promotion Agency, Bern*

High-Precision Micro-Machining

ACCURATE, VERSATILE AND EFFICIENT

Built upon its proven hybrid Laser MicroJet technology, Synova's high-precision cutting machines allow fast, precise and omni-directional processing without any chips, burrs, deposition, contamination, thermal damage, material changes and mechanical stress. Thanks to its versatile technology, the Laser MicroJet can be used for a broad range of processes, including cutting, drilling, edge grinding, grooving, scribing, milling, dicing, shaping in 3 and 5 axes, trenching, profiling and engraving.

Synova's equipment is recognized for its proven technology and ability to deliver fast, accurate and reliable material processing performance. High productivity is central to maintaining a competitive advantage and the reason behind Synova's intense dedication to develop cutting-edge systems capable of meeting cost of ownership and return on investment demands.

2010
Entry in gem diamond cutting business

2011
Launch of Diamond Cutting System (DCS)

2012
- Introduction of three business units: Diamonds, Semiconductors, Metal Industry
- OEM agreement with Makino for the manufacture of LMJ machines based on Makino platform (MCS)

2014
Partnership with GE and Makino for production of GE gas turbine parts

2015
First LMJ cutting system with 5 axes (LCS 50-5)

2016
- Distribution agreement with Makino/ SST for North American market
- Synova and Makino introduce the HybridCell (MCS 500/ EDBV8)

2017
- Relocation of international headquarters to larger premises in Duillier, Switzerland
- Over 300 LMJ systems sold worldwide

Industries We Serve

Diamonds:
Rough diamonds, lab-grown diamonds (CVD, HPHT)

Tool manufacturing:
Tool inserts, superhard materials such as PcBN, PCD, SCD and CVD diamond

Energy/ Aerospace:
Turbine blades, satellite sensors, solar cells for satellites

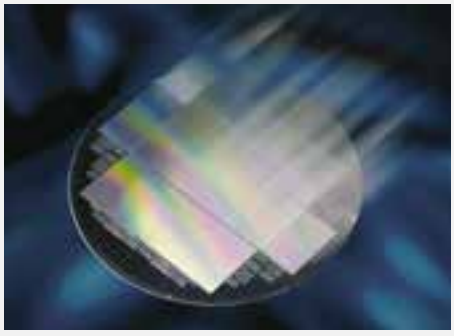
Watchmaking:
Watch hands, gear wheels, dials and other precision metal parts

LED:
Heat sinks for high-power LEDs

Flat Panel Displays:
OLED evaporation masks, high resolution TFT LCD substrates

Consumer Goods:
Shaver parts

Electronics:
High-voltage devices, metal masks (such as stencils for PCB, wafer bump stencils)



Semiconductors:
Integrated circuits, smart cards, sensor chips, MEMS

Automotive:
Fuel injection nozzles, catalytic converters, spark plugs

Medical:
Stents, needles, implants, scalpels

Photovoltaics:
Silicon solar cells, multi-junction cells, thin film cells

Close to Our Customers

AT YOUR SERVICE WITH A GLOBAL SUPPORT NETWORK

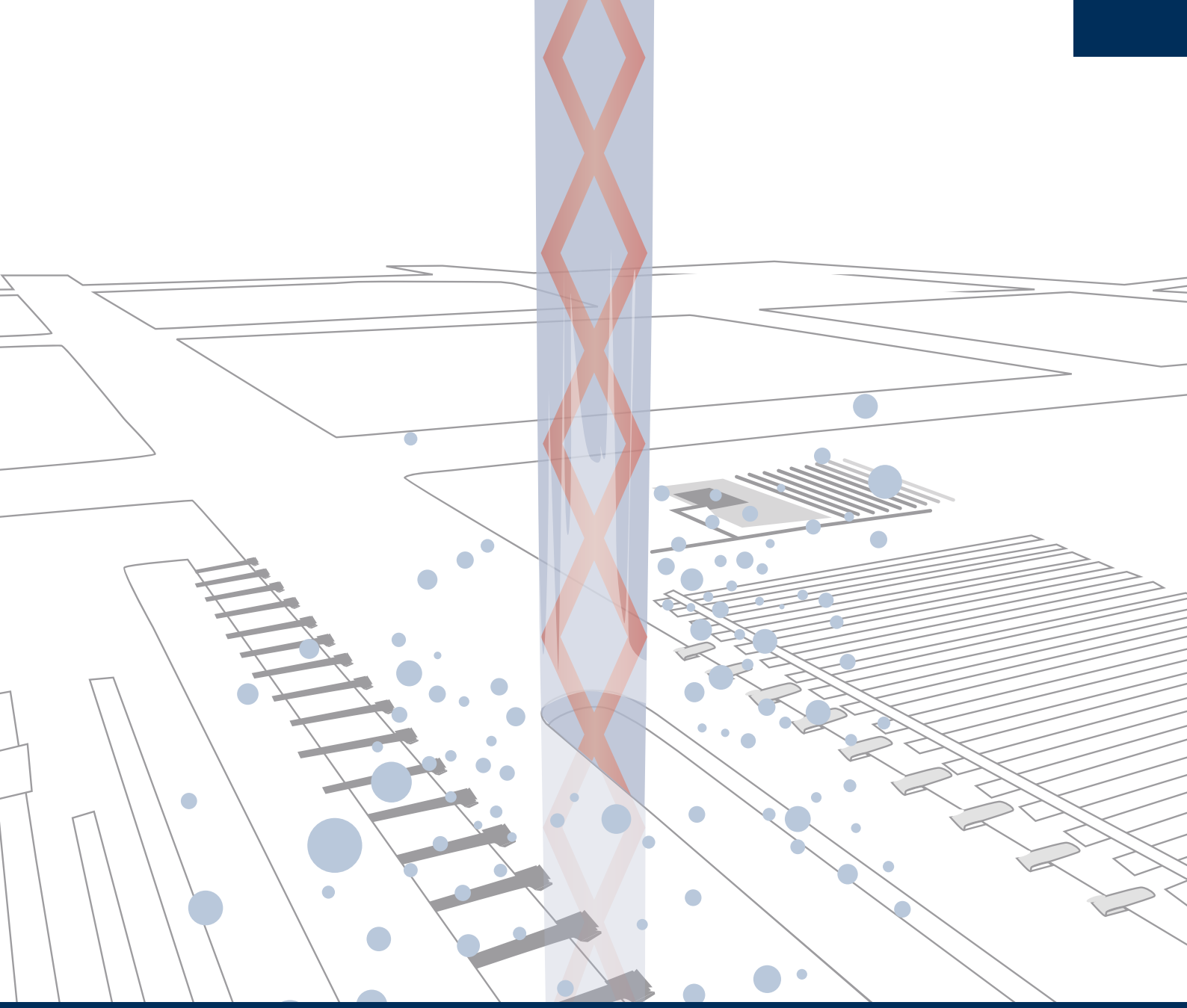
Synova is deeply committed to customer satisfaction. As part of our commitment, we have organized a global customer support network composed of micro-machining centers (MMCs), subsidiaries and distributors. Our aim is to provide our customers with fast and high-quality after-sales services around the globe.

Synova's worldwide customer support services allow companies to lower their cost of ownership across the lifetime of their Synova system. Our well-trained and experienced support engineers regularly visit customer sites to ensure proper system maintenance enabling customers to maximize efficiency and uptime. The support engineers can also adapt and extend a system's parameters for new applications.

Each Synova machine is equipped with a remote diagnostic system that allows our engineers to monitor a system's performance from our headquarters via Internet, providing customers with fast troubleshooting and support.

Synova's MMCs also serve as competence centers for demonstration, feasibility testing and application development and offer regional micro-machining services throughout Europe, Asia and the United States.

- Headquarters
- MMC (Micro-Machining Center) / Subsidiary
- Distributor



The Fusion of Water and Light

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Contact information available at: www.synova.ch

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