



Inventor of Water Jet Laser

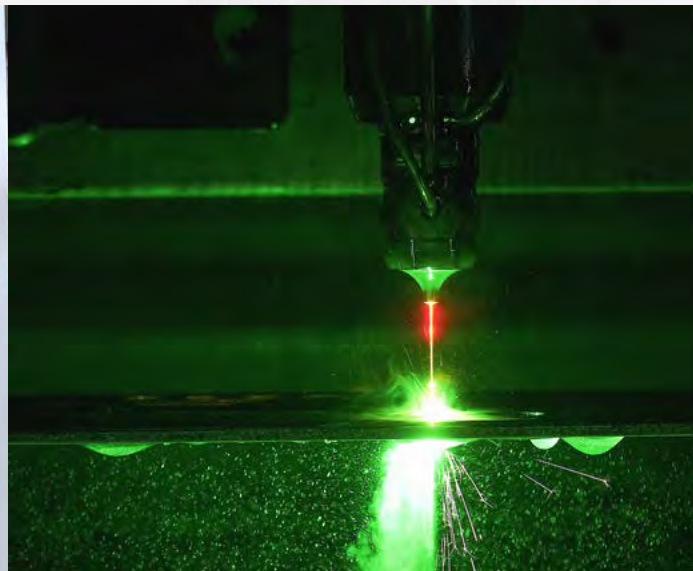
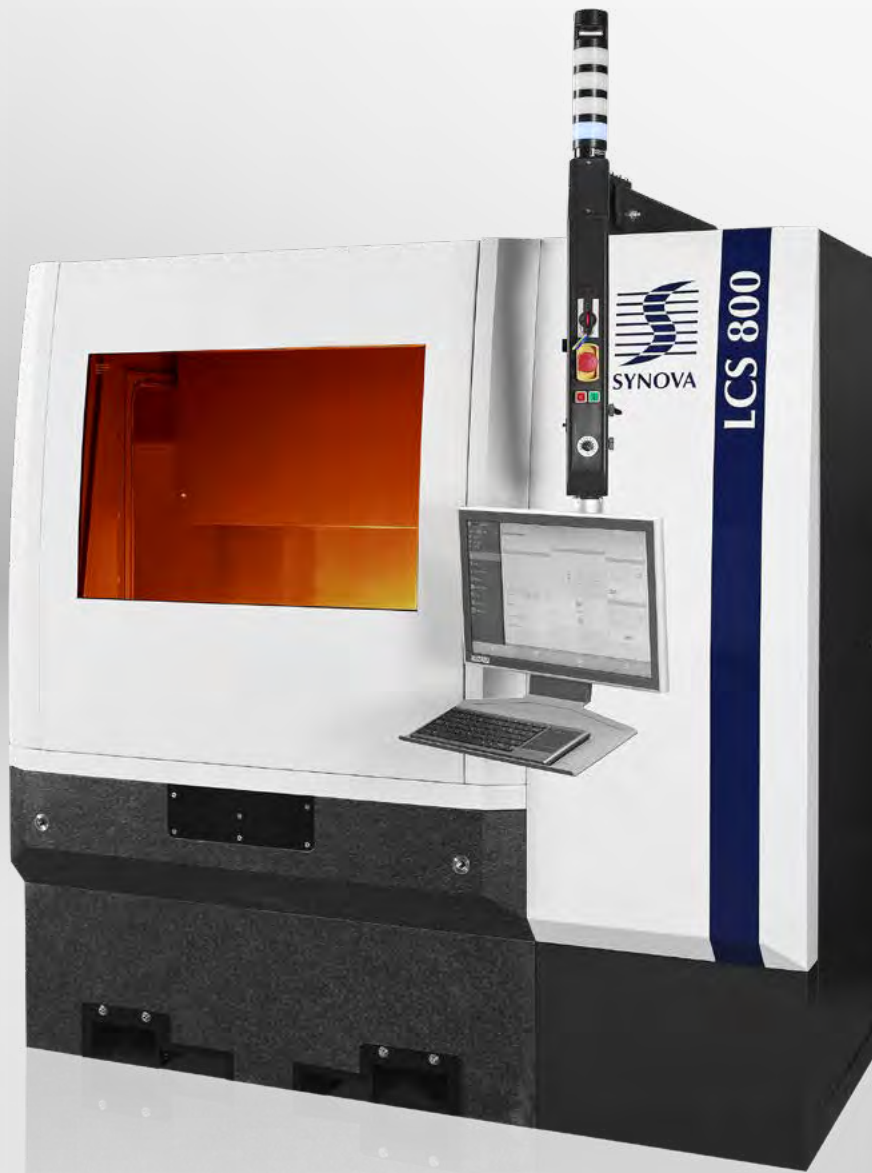


COMPANY PROFILE



www.synova.ch







Advanced Laser Machining Systems

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

All Synova systems are based on the proprietary Laser MicroJet® technology and include:

- Laser Cutting Systems (LCS)
- Metal Cutting Systems (MCS)
- XL Laser Cutting Systems (XLS)
- Laser Dicing Systems (LDS)
- Diamond Cutting Systems (DCS & DaVinci Diamond Factory)
- 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 and located in Ecublens near 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, Korea, Germany and China for optimized customer support. These have since been expanded to include micro-machining centers (MMCs).

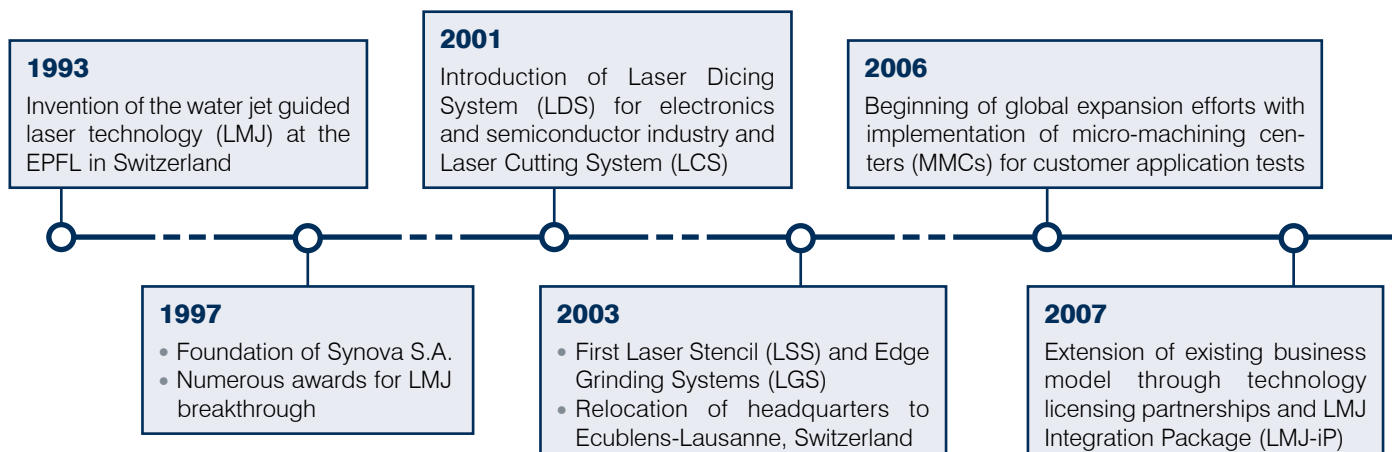
Synova has over 100 employees including 35 engineers focused primarily on researching new material cutting solutions, further applications and laser cutting equipment. Aside from research, both the final assembly and testing of up to 100 machines a year are performed in Synova's modern, 3000 square meter 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: Diamond, Semiconductor 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 technology players on strategic projects to further the technology, including the MTC and the Fraunhofer ILT and IPT.

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





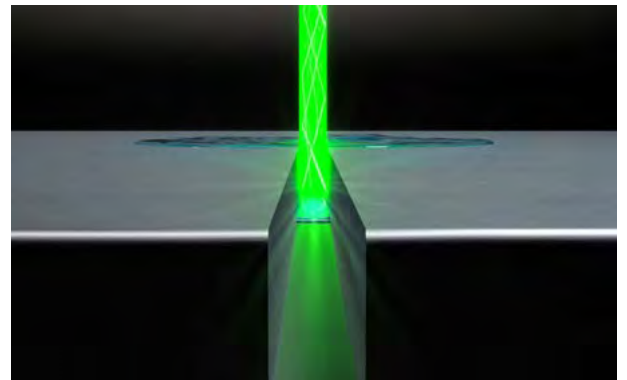
Awards

- 2020** Technology Innovation Award (Europe, Israel, Africa) – *Frost & Sullivan*
- 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*
Technologiestandort Schweiz – *OSEC, Swiss Center for Trade Promotion*
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 unique Laser MicroJet technology, Synova’s high-precision cutting machines allow fast, precise and omni-directional processing without thermal damage, burrs, chipping, debris deposition, contamination, material changes, taper and mechanical stress. Thanks to its versatile technology, the LMJ can be used for a multitude of processes in 2 to 5 axes, including cutting, drilling, milling or turning.



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

2012

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

2017

- Relocation of international headquarters to larger premises in Duillier (VD), Switzerland
- New 5-axis MCS 500 for 3D machining and hole-drilling of jet engine components

2011

Launch of Diamond Cutting System (DCS)

2015

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

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 agents. 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 the system's parameters for new applications.

Each Synova machine is equipped with a remote diagnostic system that allows our engineers to monitor the machine'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

● Subsidiary/MMC (Micro-Machining Center)

● Agent

2019

- Launch of automated laser cutting and shaping system for diamonds "DaVinci Diamond Factory"
- Relaunch of LCS 800

2021

- Opening of new subsidiary and MMC in Rottweil, Germany
- Construction of additional 800 m² assembly hall in Duillier
- Two new MMCs in China (Beijing and Shanghai)
- Over 400 LMJ systems sold worldwide

2018

- Launch of 5-axis laser machining center LCS 305 for automated diamond tool production
- New Dual Laser for high-quality processing of watch components
- Introduction of XL Laser Cutting System for large workpieces

2020

- LMJ licensing option for OEMs and end customers
- New 3-axis laser cutting system LCS 303
- Integration of LMJ technology into Makino's Luminizer series

Industries We Serve



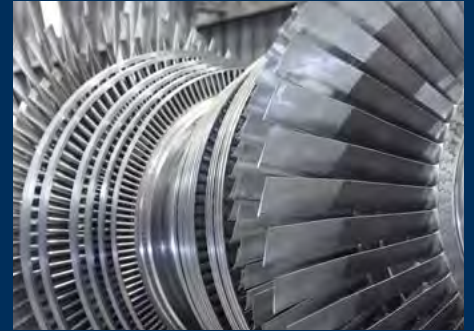
Diamond:

Natural diamonds, lab-grown diamonds (CVD, HPHT)



Tool Manufacturing:

Tool inserts (PcBN, PCD, SCD, CVD diamond), roller dresser, CVD diamond seeds



Aerospace & Energy:

Turbine blades, shrouds, vanes and other aero-engine components, satellite sensors



Watchmaking:

Watch movement components (wheels, springs, bridges etc.) and decorative parts



LED:

Heat sinks for high-power LEDs



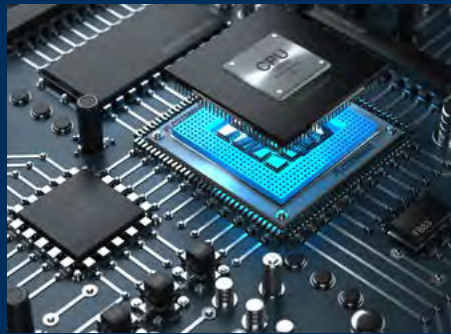
Digital Displays:

OLED evaporation masks, high resolution TFT LCD substrates



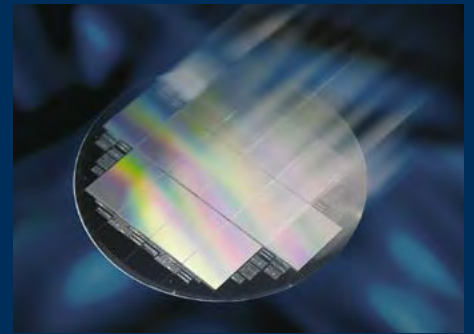
Semiconductor Equipment:

Consumables (shower heads, wafer tables, gas confinement)



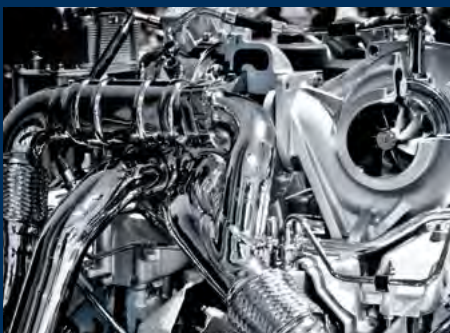
Electronics:

High-voltage devices, metal masks



Semiconductor:

Silicon wafers, integrated circuits, sensor chips, MEMS



Automotive:

Fuel injection nozzles, catalytic converters, spark plugs



Medical:

Surgical instruments, implants, tubes, stents, electronic components



Photovoltaics:

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

Water Jet Guided Laser Systems With Micron Precision



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Contact information available at: www.synova.ch