SHIMADZU
Excellence in Science

Celebrating 50 Years of MS Innovation (1970-2020)

50th MS anniversary 1970-2020

The year 2020 marks 50 years since the release of Shimadzu's first mass spectrometry device, the LKB-9000. Over the past half century, our passion for innovation has led to multiple ground-breaking developments in MS technology. With our considerable experience in the field, we take this opportunity to reflect on the past and look towards the future of MS. Through this we reaffirm our commitment as a company: to provide revolutionary products and services that contribute to society through technology, sustaining the health of the planet and of humankind.

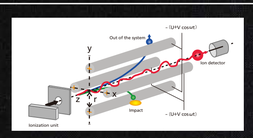
Shimadzu's Beginnings

1875 Shimadzu founded

The history of Shimadzu as a company begins with its founding in Kyoto in 1875 by Genzo Shimadzu Sr., initially as a producer of physics and chemistry equipment. The company was expanded by Genzo Jr. between 1894-1916 to grapple with emerging technologies such as batteries and X-ray equipment, which contributed to Japan's manufacturing industry as well as advances in the medical field.

A New Generation of Mass Spectrometers

1978 Began to develop key technologies for quadrupole MS



The Early Days of Mass Spectrometry

1970 LKB-9000

In cooperation with the Swedish firm LKB, Shimadzu introduced the world's first mass-produced GC-MS (magnetic sector MS) to Japan. This formed a blueprint for future Shimadzu GC/MS devices.

1981 GCMS 9020-DF

This high-performance double-focusing GCMS enabled MS/MS analysis by employing a unique ion optical system with a preceding magnetic sector. Compatible with several ionization methods, the GCMS 9020-DF could be used to elucidate the structure of compounds.

1982 GCMS-QP1000

Shimadzu released Japan's first general-purpose quadrupole GC-MS. The combination of high functionality and ease-of-use helped to popularize GC/MS technology in Japan.

The Birth of MALDI-TOF

1988 LAMS-50K

Shimadzu released the world's first MALDI-TOF MS device, and subsequently produced various example analyses of high molecular weight compounds. This dramatically expanded the possible uses of mass spectrometry.

1989 Acquired Kratos Group Plc. in the UK

1992 Kompact MALDI III/II

The Kompact MALDI III/II enabled the analysis of a wide range of compounds including peptides, proteins, polysaccharides, complex lipids, nucleic acids, pharmaceuticals and metabolites.

1875 Founding of Shimadzu

1970 The world's first GC-MS: LKB-9000

1978 Began to develop key technologies for quadrupole MS

1981 High-performance double-focusing GC-MS: GCMS 9020-DF

1982 Japan's first GC-MS: GCMS-QP1000

1988 The world's first MALDI-TOF MS: LAMS-50K

1992 Kompact MALDI III/II

2002 AXIMA-QIT

2004 LCMS-IT-TOF

2010 Japan's first quadrupole LC-MS/MS: LCMS-8030

2012 GCMS-TQ8030

2013 iMScope

2016 ICPMS-2030

2017 DPiMS-2020

2018 LCMS-9030

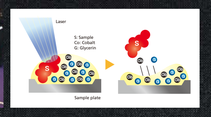
2019 MALDImini-1

2002 AXIMA-QIT

The AXIMA-QIT was the world's first MALDI-TOF MS to combine ion trap and TOF methods. This allowed detailed structural analysis of complex molecules.

2002 Koichi Tanaka awarded the Nobel Prize

Koichi Tanaka received the Nobel Prize in Chemistry for the development of soft desorption ionization methods for MS analysis of biological macromolecules. The Koichi Tanaka Mass Spectrometry Research Laboratory was established in 2003.



The Era of Triple Quad

2010 LCMS-8030

The LCMS-8030 was the first domestically-produced quadrupole LC-MS/MS, at the same time achieving world-fastest detection speeds. This met customer needs for processing a high number of samples for applications in life-science research, residual pesticide analysis in foodstuffs, pharmaceutical metabolite detection, environmental pollution monitoring, etc.

2012 GCMS-TQ8030

Incorporating the same technology that enabled the high-speed LC/MS/MS analysis of the LCMS-8030, the GCMS-TQ8030 achieved world-leading sensitivity and speed. This was the first triple quadrupole GC-MS/MS to be produced in Japan.

2015 LCMS-8060

The successful release of the LCMS-8050 in 2013 was followed quickly by the LCMS-8060, a high-end triple quadrupole MS, which improved upon the ion path of the 8050 and achieved three times the sensitivity.

2018 GCMS-TQ8050 NX

Shimadzu released the GCMS-TQ8050 NX, an ultra-high-sensitivity triple quadrupole GC-MS for pioneering research in new fields. It is capable of performing unprecedented quantitative analyses of ultra-trace amounts, down to the femtogram level.

2018 LCMS-9030

As the first domestically-produced triple quadrupole time-of-flight LC-MS, the LCMS-9030 allowed Shimadzu to make their mark on the high-resolution market. Precise, sensitive and reliable mass measurements can be carried out with remarkably simple operations, increasing the accessibility of such high-sensitivity analysis.

Shimadzu's Unique Technologies

Shimadzu has developed several instruments and technologies that are completely unique. The establishment of Innovation Centers around the world serves to promote this cutting-edge research and development in collaboration with our customers. In these ways, Shimadzu continually strives to contribute to society through the use of new technologies.

2004 LCMS-IT-TOF

Shimadzu released a world-first hybrid LC/MS model fusing IT and TOF, enabling structural analysis etc. with MS^n capabilities.

2013 iMScope

The iMScope mass imaging microscope boasts the power of both mass spectrometry and optical microscopy in one hybrid instrument. It can merge precise, high-quality MS images and optical images.

2017 DPiMS-2020

Shimadzu released the DPiMS-2020 Direct Probe Ionization Mass Spectrometer.

2019 MALDImini™-1

The MALDImini-1 is a high-sensitivity MALDI MS capable of MS^n measurements. It is nonetheless astonishingly compact thanks to the use of pioneering Digital Ion Trap (DIT) technology. It fits on a bench space equivalent to an A3 piece of paper.