

## Improving the Quality of Research through Cooperation with Outside Researchers



Location : Manchester, U.K.  
Date of foundation : April 1997  
Capital : £300,000  
Number of employees : 25  
Research areas : Surface analysis, mass spectrometry, optical technology, collection and provision of technical information



Managing Director: Sumio Kumashiro

**T**his research laboratory was established in April 1997 as a wholly owned subsidiary of Shimadzu Corporation. It later became a subsidiary of Shimadzu Europe Ltd. (SEL), which is a regional holding company of Shimadzu in Europe. Since then we have been primarily engaged in work commissioned by Shimadzu headquarters and have functioned as a European base for core technology R&D as well as collecting and providing technical information for the Shimadzu Group. The U.K. was selected as our base of operations because of its academic environment, which has greatly contributed to technological development in the fields of mass spectrometry and surface analysis. The U.K. also has a long tradition and history of fostering basic research. Another reason that SRL was established in Manchester, U.K., was to share premises and facilities with a closely affiliated firm in the Shimadzu group, KRATOS, who produce surface analysis equipment and MALDI-TOF mass spectrometers.

**O**ur establishment as a research laboratory in 1997 was accompanied by assignments from Shimadzu Corporation to push forward the development of basic technology for mass spectrometers and scanning electron microscopes (SEM). These projects lasted up to five years. One result of our research is the MALDI-Quadrupole Ion Trap-TOF Mass Spectrometer AXIMA-QIT, which

has been released as a product by KRATOS.

**S**ince then, while centering on hardware development for mass spectrometers and SEMs, we have gradually expanded our research areas to include bio and nanotechnology. In the field of mass spectrometry, we have started basic research on new types of ion-trap technology, algorithms for determining the amino-acid sequences of proteins, and reagents for the quantitative and comparative analysis of proteins. In the field of SEMs, we are pushing forward with research on algorithms for processing spectral imaging data, ultrasensitive electron-energy analyzers, ultra-low acceleration compact SEMs, and aberration-corrected electronic optical systems. These research projects are just starting to bear fruit. How to make effective use of research results is the subject of continuing debate, but one option being considered is the transfer of technology to

either the Technology Research Laboratory or the Koichi Tanaka Mass Spectrometry Research Laboratory at Shimadzu Corp. so that the technology may be further evaluated for potential applications and its feasibility for commercialization assessed.

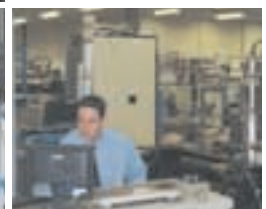
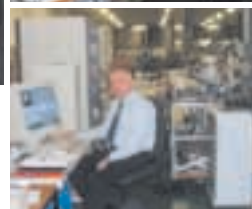
**T**he SRL is a relatively small-scale operation and we place great importance on cooperation with researchers outside the company. We will continue striving to improve the quality of research by strengthening our relationships with other research organizations. We are also accumulating technical know-how in areas such as design technology for electron/ion-beam optical systems, algorithms for processing data and controlling equipment, and the design of high-precision power supplies. All of us here will continue to make every effort to ensure that these research activities lead to bigger growth of the whole Shimadzu Group.



▲ Employees at a meeting



◀ R&D for mass spectrometers



Development of SEMs and related technology ▶