

● Data Collection Software

Windows based data collection software, which can control the grating angle, Raman shift for spectrograph. Further more can also control the exposure time and read out format for the cooled CCD camera. These parameter can be saved in a configuration file and can be loaded easily. Cosmic ray reduction and file conversion (text, Grams SPC format) functions are also included.

● Data Processing Software Grams32/AI™

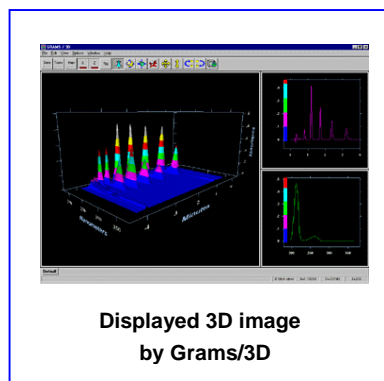
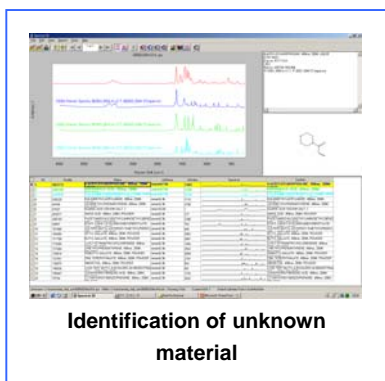
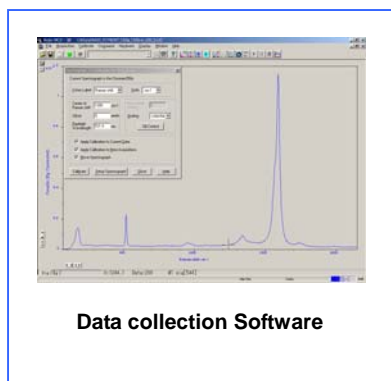
Grams32/AI™ is the premier solution for visualizing, processing and managing spectroscopy data offering broad compatibility with many different data types and a simple user interface. It has many functions of operation of the differentiation integration between spectra and curve fittings, deconvolution, etc. Moreover, it can read/write ASCII file. It is offered the program development environment is in the array basic language. The following are prepared as optional software for the data analysis.

• Spectral ID™

Spectral ID provides rapid searching of multiple format Raman spectral libraries. Libraries can be centrally hosted, managed and searched using the optional server component allowing efficient use of your organizations intellectual property.

• Grams/3D™

GRAMS/3D adds real-time, interactive 3D graphic visualization to the extensive list of capabilities already included in GRAMS/AI. We can manipulate large 3D data sets in real-time on their PCs and see the unseen information hidden in multidimensional data.



● AutoMap Software

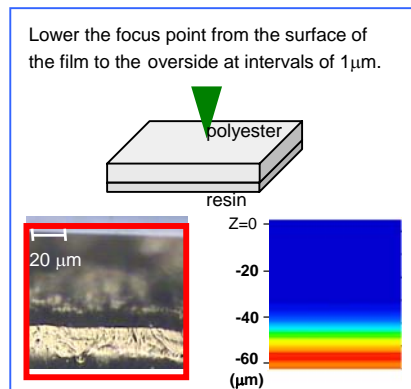
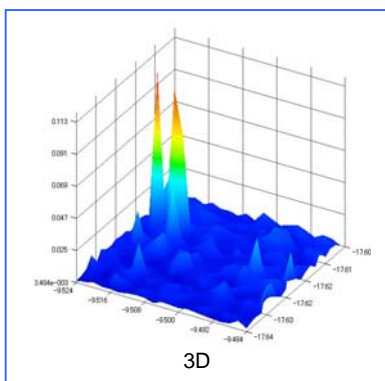
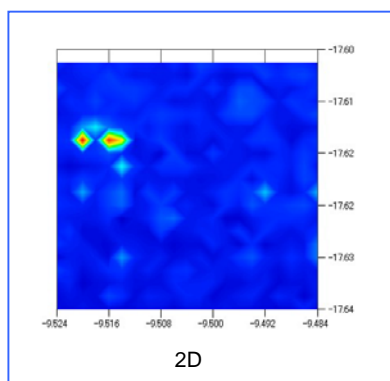
Automap is software that acquires Raman spectrum of specified coordinates, and plots peak strength of the specific Raman shift, and display the image.

• XY-Mapping measurement

Measure Raman spectrum of the opal slice. Calculate the ratio of peak height (Peak height of quartz / Peak height of quartz + Peak height of cristobalite * 1.89). Plot coordinates of XY and ratio of the Peak height (Z)

• Depth profiling Z-scan

Resolution in the direction of depth became higher by measuring confocal Raman. It is suitable for the analysis of a micro part.

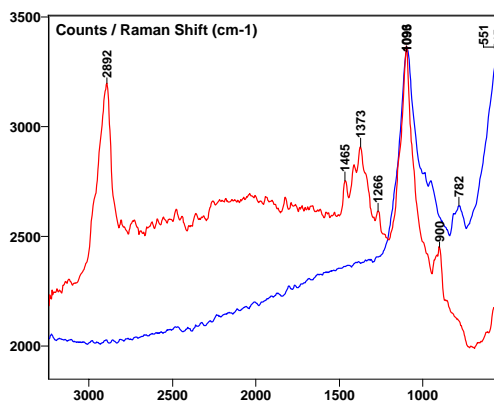
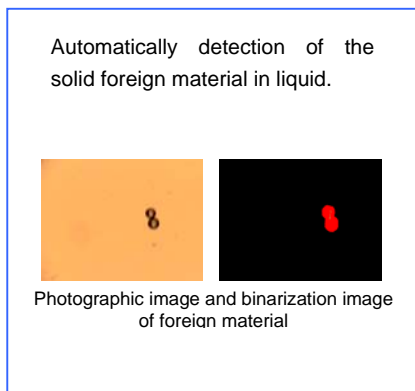


Data provided by K.Shinoda, Osaka City University

● **AutoFind Software**

- Auto detection for foreign material in Inject the liquid medicine

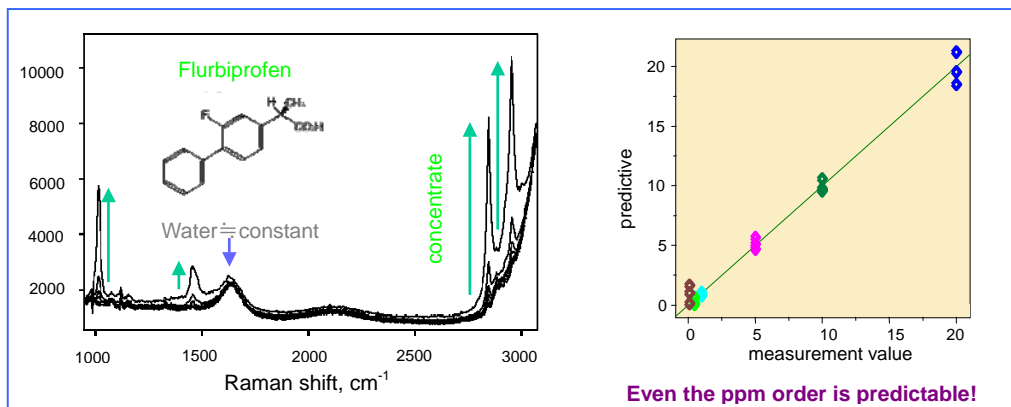
This software can automatically detect the foreign material in liquid micro cell by using image analysis (binarization processing) under the optical microscope with color CCD camera image. Irradiate the laser beam to the detected foreign material by non contact, then measured Raman spectrum is searched by using Raman spectrum libraries.



● **Multivariate analysis software**

- Quantitative analysis: **PLSplus/IQ™**, **Pirouette™**

The quantitative analysis is done by PLS method (Partial least squares regression) Construct the model with the solution concentration and relative intensity of Raman spectrum. Physical properties of the sample are estimated from the calibration data set.



- Polymorph Characterization: **Pirouette™**
High Throughput Crystallization with 96 well plate

Raman spectroscopy, a technique known for its ease of use, minimal sample prep, non-destructive sampling, and the ability to distinguish between crystalline forms, combines with new software to automate crystallization data collection from micro well plates, and quickly analyze and present meaningful information. The result is new levels of efficiency in high throughput crystallization (HTC) studies.

