

Using the LabVIEW® Programming Environment to Create Customisable Instrument Control and Data Acquisition Software for a Home-made MALDI-*oa*-TOF Mass Spectrometer

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Current commercial mass spectrometers typically use one or more computers to control the instrument and acquire and process data. When constructing a prototype mass spectrometer, it is also important to be able to readily customise the instrument control and data acquisition environment, to reflect changes made to the instrument during the development process.

The home-made matrix assisted laser desorption/ionisation orthogonal acceleration time-of-flight (MALDI-*oa*-TOF) mass spectrometer used in this study has been reported elsewhere [1]. Software (“virtual instruments” or “VIs”) was written in the LabVIEW version 5 programming environment for this mass spectrometer. These VIs were used to control the instrument (power supply potentials, laser firing and gating of critical events) and to download and process time-of-flight spectra recorded with an oscilloscope. The operation of these VIs will be explained in detail, together with examples that indicate the flexibility this programming environment provided when the instrument was modified.

- [1] D.S. Selby, V.V. Mlynski and M. Guilhaus, “A 20kV orthogonal acceleration time-of-flight mass spectrometer for matrix-assisted laser desorption/ionization” (2001) 210 *Int J Mass Spectrom* 89-100
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