
TOWARDS VALVE-LESS 2-DIMENSIONAL ION CHROMATOGRAPHY

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This work is aimed towards valve-less comprehensive 2-dimensional Ion Chromatography. Instead of relying on loops and switching valves as a way of collecting and transferring the 1st dimension effluent to the 2nd dimension column, here we investigated the use a trap and the effect of eluent strength as a novel approach to modulation and manipulation of chromatographic bands. The system will consist of three pumps and three eluent generators. This set-up enables control over the 1st and 2nd dimension separations as well as the trap column. The trap/release procedure is controlled by pulsing the eluent strength.

Valve-less 2D ion chromatography looks promising, and the evaluated analytes proved easy to control. It is envisaged that the resolution between difficult analyte pairs will be improved. The freedom of choice of the 1st and 2nd dimension columns will enable separation of complex samples.