Optimizing 3D Amperometry for Analyte Identification in Liquid Chromatography
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3-D Amperometry is a new technique allowing characterization of trace amounts of analytes after their separation on a suitable chromatographic column. In this presentation, we describe the use of anion exchange separation followed by detection with the help of a gold electrode. Scanning detection waveform which is used in the 3-D Amperometry make possible acquisition of three dimensional chromatograms (current, potential, retention time).

We describe a step by step optimization of scanning waveforms. The chromatograms collected with optimized scanning waveforms need to be background corrected to eliminate contributions from non-Faradaic processes such as double layer charging. With the background correction, it becomes possible to extract highly characteristic current-potential plots for all eluting peaks. Previously collected current-potential plots of known standards can then be used for identification of low amounts (picomol) of unknown compounds.