SYSTEM LAYOUT FOR AN AUTOMATED SYSTEM FOR SAMPLE PREPARATION AND ANALYSIS

[0001] The present application claims the filing benefit of U.S. Provisional Application Serial No. 61/408,180, filed October 29, 2010~~, the disclosure of which is incorporated herein by reference in its entirety~~.

FIELD OF THE INVENTION

[0002] The present invention relates generally to the field of sample preparation and analysis and, more particularly, to systems and layouts for arranging sample preparation and analysis instrumentations.

BACKGROUND OF THE INVENTION

[0003] Liquid chromatography mass spectrometry ("LCMS") is a powerful analyte detection and measurement technique that has become the preferred method of detecting small molecule, amino acid, protein, peptide, nucleic acid, lipid, and carbohydrate analytes to a high accuracy for diagnostic purposes. However, the instrumentation required for LCMS is technically complex and not well suited to the typical hospital clinical lab or medical lab technician. These clinical labs have not adopted LCMS diagnostics and, instead, generally use alternative diagnostic techniques, including automated immunoassay. Alternatively, the clinical labs may send the samples out to a central laboratory for analysis.

[0004] Therefore, there is a need for sample preparation and sample analysis systems that are less complex to configure and use for preparing samples and conducting a variety of different analyte assays, without requiring the expertise of LCMS technologists, or the massive scale of a reference laboratory. There is yet also a need for a sample preparation and sample analysis systems that improve the efficiency of the time to result for a variety of different analyte assays.