

Mass spectrometer design report

Profession



**ASSIGN
BUSTER**

Abstract

This report documents the design of a mass-spectrometer in sufficient detail so it can be constructed by a competent technician from the information contained here, without any further reference to the design engineer themselves. The mass-spectrometer described here is intended for with the ability to . In general, the instrument needs to be (1/4 - 1/2 page)

Introduction

A mass-spectrometer is a device which does and does these things, the mass-spectrometer works on and [1] and . Mass-spectrometers in general can be used for . The specifications of the mass-spectrometer as designed here are given in section 2. The final design is given in section 3. That includes diagrams of the entire instrument with labels showing all dimensions, a list of all major components required, details of all major electrical components including the voltages and currents required, details of the electric and magnetic fields utilized and of any subsystems used to generate those fields.

Section 4 contains example calculations demonstrating the operation of the device for two different atomic species. Intermediate results are given at key points in the calculations so that the method of calculation can be easily verified. A table of all formula used in the calculations is given in appendix A along with a description of the purpose for which each is used. Section 5 contains a checklist comparing the characteristics and performance of the device against the original specifications.

Section 6 contains a conclusion stating clearly how closely the specifications were met or by how far they were exceeded. References follow the conclusion. There are no references to websites, only to original documents, articles, or books. (3/4 page)