Major Inventions in Mass Spectrometry in the last 50 Years

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Abstract

Mass Spectrometry was invented in the early part of the 20th Century at the U of Cambridge, England. Initial use of this new technology was to understand the nature of elements, uncovering the isotopes of the non-radioactive elements. Though used for several decades, it was not until WW II that the first commercial mass spectrometer was developed and used to aid the Manhattan Project. The petroleum industry was instrumental in commercialization of the technology – dominating use up to the early 70’s. The selection of the quadrupole mass spectrometer – invented by Wolfgang Paul in the 50’s – by the US EPA for environmental monitoring started the current rise of general mass spectrometer use. The technology has had many advances to provide us with the mass spectrometer offerings we have today, all but two emerging from University research. The talk will focus on the mass spectrometer inventions and the background that allowed each to develop.

Biosketch

Richard Phillips is employed in the Business Development Group of Thermo Fisher Scientific, focusing on Food and Environmental applications. In his 15 years with Thermo, he has been involved with both organic and inorganic mass spectrometry. Prior employment include 10 years running GCMS and ICPMS for an environmental firm in San Diego, 5 years as a proteomics applications chemist with Bruker Daltonics running LCMS Ion Trap mass spectrometers, and brief employment at Los Alamos National Laboratory using magnetic sectors and Arena Pharmaceuticals running LCMS Triple Quadrupole instruments for drug discovery.