

Recent Developments in Ionization Methods for Mass Spectrometry: An Overview and Prospects

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Formation of gas-phase ions of the analytes to be investigated is one of the necessary evils in the practice of mass spectrometry. The development of new ionization methods/sources/ interfaces are usually accompanied by at least a mini-revolution in the applications and users of mass spectrometry. Such is the case for the various desorption ionization and spray ionization techniques that have come into prominence over the last decade. These techniques have opened to mass spectrometric analysis a wide variety of analytes heretofore difficult or impossible to analyze. Particular impact has been in the biological arena with the dramatic increase in the use of mass spectrometry by biologists and as a major tool in the general area of biotechnology. A testament to this is the recent award of the Nobel Prize in chemistry to John Fenn for his contributions to electrospray, its impact in the analysis of biomolecules, and the implication of the data obtained for medicine. In this presentation I will present a whirlwind overview of what I hope most might consider the more important ionization developments in the last several years covering their basis of operation, utility, and prospects for the future. I will conclude with some thoughts on the general future of gas-phase ion formation in mass spectrometry.
