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CURRICULUM VITA

NAME Robert J. Cotter		POSITION TITLE Professor of Pharmacology and Molecular Sciences	
eRA COMMONS USER NAME rcotter		Professor of Biophysics and Biophysical Chemistry Johns Hopkins School of Medicine	
EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i>)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
College of the Holy Cross, Worcester MA	BS	1965	Chemistry
Johns Hopkins University, Baltimore MD	MS	1971	Physical Chemistry
Johns Hopkins University, Baltimore MD	PhD	1972	Physical Chemistry

PROFESSIONAL EXPERIENCE

Academic appointments:

1972–1974	Assistant Professor of Chemistry, Towson State University, Baltimore, MD.
1974–1977	Assistant Professor of Analytical Chemistry, Gettysburg College, Gettysburg, PA.
1978–1980	Faculty Research Associate, Johns Hopkins School of Medicine, Baltimore MD
1981–1986	Assistant Professor of Pharmacology & Exp'l Therapeutics, Johns Hopkins School of Medicine
1985	Visiting Faculty, Institut de Physique Nucleaire Orsay, France
1986–1992	Associate Professor of Pharmacology & Molecular Sciences, Johns Hopkins School of Medicine
1987–present	Director: <i>Middle Atlantic Mass Spectrometry Laboratory</i> , Johns Hopkins School of Medicine
1989–1992	Adjunct Professor of Engineering, University of Maryland Baltimore County
1992–present	Professor of Pharmacology and Molecular Sciences, Johns Hopkins School of Medicine
1994–present	Professor of Biophysics and Biophysical Chemistry, Johns Hopkins School of Medicine
2001–present	Principal Professional Staff, Johns Hopkins University Applied Physics Laboratory (APL)

Professional activities:

Editorial Advisory Board	<i>Rapid Communications in Mass Spectrometry</i>	1988–present
Editorial Advisory Board	<i>Mass Spectrometry Reviews</i>	1992–present
Editorial Advisory Board	<i>Proteins: Structure, Function & Bioinformatics</i>	1995–2005
Associate Editor	<i>Clinical Proteomics</i>	2005–present
Member at Large	<i>Board of Directors of the American Society for Mass Spectrometry</i>	1990–92
Chairman	<i>Education Committee, American Society for Mass Spectrometry</i>	1990–92
Member	<i>Sanibel Conference Organizing Committee</i>	1990–93
Chairman	<i>Time-of-Flight Interest Group, ASMS</i>	1995–96
Vice President Programs	<i>American Society for Mass Spectrometry</i>	1996–98
President	<i>American Society for Mass Spectrometry</i>	1998–2000
Past President	<i>American Society for Mass Spectrometry</i>	2000–2002

Advisory Board	<i>Southern California Mass Spectrometry Facility, UC Riverside</i>	1990–
Co–Chairman	<i>Greater Washington Area Mass Spectrometry Discussion Group</i>	1987–89
Member	<i>USHUPO Council</i>	2002–present
Treasurer	<i>USHUPO</i>	2006–2008
Co–chairman	<i>USHUPO Conference 2008</i>	2007–
Member	<i>National Science Foundation Biological Instrumentation Panel</i>	1987–93
Member	<i>NIH Division of Research Resources (DRR) Special Study Section</i>	1986–
Member	<i>NIH Small Business Innovative Research (SBIR) Special Study Section</i>	1986–
Member	<i>NIH Pharmacology Special Study Section</i>	1987
Member	<i>NIH Human Genome Special Study Section</i>	1990–1995
Member	<i>NIH Biological Chemistry and Macromolecular Biophysics (BCMB) Study Section</i>	2003–
Member	<i>DOE Human Genome Panel</i>	1993–4
Member	<i>National Science Foundation Future Technologies Panel</i>	1995
Member	<i>CBMSII Chemical and Biological Defense Program Panel</i>	2002–1003
Member	<i>National Research Council/NAS Report Committee: Biological Point Detectors</i>	2003–2005
Consultant	<i>Wyeth–Ayerst Laboratories, Princeton NJ</i>	1984–1990
Consultant	<i>Kratos Analytical, Manchester UK</i>	1986–
Consultant	<i>JEOL, USA, Peabody MA</i>	1994–1999
Consultant	<i>Johns Hopkins Applied Physics Laboratory MSX Missile Program</i>	1990–92
Consultant	<i>Smith's Detection, Ontario Canada</i>	2005–2007
Scientific Advisory Board	<i>Sequenom, Inc., La Jolla CA</i>	1994–2001
Scientific Advisory Board	<i>Meridian, Inc., East Lansing MI</i>	1994
Scientific Advisory Board	<i>LumiCyte, Fremont CA</i>	1998–2002
Scientific Advisory Board	<i>Sionex, Bedford MA</i>	2003–2006
Scientific Advisory Board	<i>Predicant, South San Francisco CA</i>	2005–2006
Scientific Advisory Board	<i>Bio–Rad, Hercules CA</i>	2006–
Member	<i>Scientific & Educational Advisory Board: Maryland Science Center, Baltimore</i>	1993–
Chairman	<i>Scientific & Educational Advisory Board: Maryland Science Center, Baltimore</i>	2005–2007
Member	<i>Board of Directors: Maryland Science Center, Baltimore</i>	2005–2007
Member	<i>American Chemical Society</i>	1961–
Member	<i>ACS Maryland Section</i>	1965–
Member	<i>ACS Analytical Division</i>	1978–
Member	<i>American Society for Mass Spectrometry</i>	1978–

Inventions and Patents:

US5,101,105	Mar 31, 1992	<i>Neutralization/chemical reionization tandem mass spectrometry method and apparatus therefore,</i>	Fenselau, C., Cotter, R.J.,
US5,202,563	Apr 13, 1993	<i>Tandem time–of–flight mass spectrometer</i>	Cotter, R.J., Cornish, T.J.
US5,464,985	Nov 7, 1995	<i>Non–linear reflectron (Curved–field reflectron)</i>	Cornish, T.J., Cotter, R.J.
US5,399,857	Mar 21, 1995	<i>Method and apparatus for trapping ions by increasing trapping voltage during ion introduction</i>	Doroshenko, V.M. Cotter, R.J.,
US5,572,025	Nov 5, 1996	<i>Method and apparatus for scanning an ion trap mass spectrometer in the resonance ejection mode</i>	Cotter, R.J. Doroshenko, V.M.
US5,696,376	Dec 9, 1997	<i>Method and apparatus for isolating ions in an ion trap with increased resolving power</i>	Doroshenko, V.M. Cotter, R.J.,
US5,814,813	Sep 29, 1998	<i>Endcap reflectron for a time–of–flight mass spectrometer and method of using the same</i>	Cotter, R.J. Cornish, T.J.,
US6,365,892	Apr 2, 2002	<i>Method and apparatus for correction of initial ion velocity in a reflectron time–of–flight mass spectrometer</i>	Cotter, R.J. Doroshenko, V.M.,
US6,518,568	Feb 11, 2003	<i>Method and apparatus of mass–correlated pulsed extraction for a time–of–flight mass spectrometer</i>	Kovtoun, V. Cotter, R.J.
US7,015,463	Mar 21, 2006	<i>Miniaturized sample scanning mass analyzer</i>	Cotter, R.J., English, R.D. Gardner, B.D.
US7,045,777	May 16, 2006	<i>Combined chemical/biological agent mass spectrometer detector</i>	Cotter, R.J.
US7,271,397	Sept 18, 2007	<i>Combined chemical/biological agent detection system and method utilizing mass spectrometry</i>	Cotter, R.J., Bryden, W. Ecelberger, S.
US7,372,021	May 13, 2008	<i>Time–of–flight mass spectrometer combining fields non–linear in time and space</i>	Cotter, R.J., Gardner, B.D. Holland, J.F.

Plenary/Keynote Lectures:

<i>International Symposium on Analytical Pyrolysis</i>	Vail CO	1982
<i>I Encontro Latino Americano de Espectrometria de Massas</i>	Rio de Janeiro, Brazil	1986

11th Annual Meeting of the Japanese Society for Medical Mass Spectrometry	Osaka, Japan	1986
16th Meeting of the British Mass Spectrometry Society	York, UK	1987
2nd Joint Japan China Symposium on Mass Spectrometry	Takarazuka, Japan	1987
International Symposium on Mass Spectrometry in the Life Sciences	Ghent, Belgium	1988
14th Annual Meeting of the Japanese Society for Medical Mass Spectrometry	Nagoya, Japan	1989
17th Annual Meeting of the Japanese Society for Medical Mass Spectrometry	Kanazawa, Japan	1992
International Meeting on Biological Mass Spectrometry	Kyoto, Japan	1993
Third International Symposium on Mass Spectrometry in the Health and Life Sciences	San Francisco CA	1994
Plant Genome III	San Diego CA	1995
Kyushu Branch Japanese Society for Analytical Chemistry	Fukuoka, Japan	1996
United Nations University Symposium	Tokyo, Japan	1997
United Nations University Symposium	Singapore	1997
PacificChem	Honolulu HI	2000
Mass Spectrometry Society of Japan (MSSJ)	Tsukuba, Japan	2003
HUPO 2nd Annual & IUBMB XIX World Congress	Montreal, Canada	2003
31st Japanese Society for Biomedical Mass Spectrometry	Awara–Onsen, Japan	2004
Chinese Biomedical Mass Spectrometry Society	Shanghai PRC	2004
1st Latin American Protein Society (LAPS) Meeting	Brazil	2004
2nd Congress of the Russian Society for Mass Spectrometry	Moscow	2005
1st Mexican Symposium on Mass Spectrometry, Molecular and Cellular Proteomics	Cuernavaca Mor. Mexico	2005
COLACRO XI	Merida, Mexico	2006
International School of Calabria	Calabria, Italy	2006
Japanese Society for Biomedical Mass Spectrometry	Nagoya, Japan	2006
Brazilian Mass Spectrometry Conference	Rio de Janeiro, Brazil	2006
1st Annual Iberian Proteomics Congress (LAHUPO)	Buenos Aires, Argentina	2007
Brazilian Mass Spectrometry Meeting	Campinas, Brazil	2007

Symposia/Workshops Organized:

Time-of-Flight Analysis	1986 ASMS Fall Workshop	Washington DC (1986)
Mechanisms in Desorption Ionization	ASMS Special Topics	Sanibel Island (1989).
Instrumentation for Time-of-Flight Mass Spectrometry	LeCroy Corporation Symposium	NY (1992).
Short Course on Mass Spectrometry	US Food and Drug Admin	Rockville (1993)
Mass Spectrometry in Immunology	ACS/MARM	Baltimore (May 1994)
DNA Sequencing by MALDI TOF Mass Spectrometry	ASMS Meeting	Portland OR (1996).
Enabling Technologies for TOF Mass Spectrometry	PittCon Symposium	(1999)
Symposium on Biodetection	2001 ACS MARM	(May 31, 2001)
Time-of-Flight Mass Spectrometry in Proteomics	FACSS 31st Annual Meeting	Portland, Oregon October 3–7, 2004
Short Course on Tandem MS	USHUPO	Boston MA (March 2006)
Short Course on Tandem MS	USHUPO	Seattle WA (March 2007)
USHUPO Annual Meeting (co-chair)	USHUPO	Bethesda MD (March 2008)

PUBLICATIONS

Books Published:

1. *Time-of-Flight Mass Spectrometry*, Robert J. Cotter (Ed); ACS Symposium Series 549, American Chemical Society, Washington DC (1994).
2. *Time-of-Flight Mass Spectrometry: Instrumentation and Applications in Biological Research*, Robert J. Cotter, American Chemical Society, Washington DC (1997).

Publications in Scientific Journals, Reviews and Book Chapters

1. Cotter, R.J.; Rozett, R.W.; Koski, W.S., *Reactions of H₂O⁺ and D₂O⁺ with Molecular Hydrogen*, **J. Chem. Phys.** **57** (1972) 4100.
2. Cotter, R.J.; Koski, W.S., *Reactions of D₃O⁺ with D₂: Proton Affinity of Water*, **J. Chem. Phys.** **59** (1973) 784.
3. Lin, K.C.; Cotter, R.J.; Koski, W.S., *Electronic States of B⁺ Produced by Electron Bombardment of Boron Trihalides: Some Ion–molecule Reactions of B⁺*, **J. Chem. Phys.** **60** (1974) 4312.
4. Lin, K.C.; Cotter, R.J.; Koski, W.S., *Cross Section and Isotope Effect in the Reaction of F⁺ with Molecular Hydrogen*, **J. Chem. Phys.** **60** (1974) 5134.
5. Lin, K.C.; Watkins, H.P.; Cotter, R.J.; Koski, W.S., *Reactions of B⁺ with D₂*, **J. Chem. Phys.** **60** (1974) 49.
6. Cotter, R.J., *Qualitative and Quantitative Analysis Using a Rapid Scanning Polarograph*, *J. Chem. Ed.* **54** (1977) 475.
7. Cotter, R.J., *Inexpensive Instrument for Rapid Scanning Polarography*, **J. Chem. Ed.** **54** (1977) 473.
8. Cotter, R.J., *Probe for Direct Exposure of Solid Samples to the Reagent Gas in a Chemical Ionization Mass Spectrometer*, **Anal. Chem.** **51** (1979) 317.
9. Cotter, R.J.; Fenselau, C., *The Effects of Heating Rate and Sample Size on the Direct Exposure/Chemical Ionization Mass Spectra of Some Biological Conjugates*, **Biomed. Mass Spectrom.** **6** (1979) 287.
10. Cotter, R.J., *A Microcomputer Current Programmer for Mass Spectrometer Direct Exposure Probes*, **Biomed. Mass Spectrom.** **6** (1979) 508.
11. Cotter, R.J., *Oscilloscope Mass Spectrum Display for the Dupont 491 Mass Spectrometer*, **Chem. Biomed. Environ. Instrum.** **10** (1980) 55.

12. Cotter, R.J., *Laser Desorption Chemical Ionization mass Spectrometry*, **Anal. Chem.** **52** (1980) 1767.
13. Cotter, R.J., *Mass Spectrometry of Non-volatile Compounds by Desorption from Extended Probes (Review)*, **Anal. Chem.** **52** (1980) 1589A.
14. Cotter, R.J., *Timing Circuitry for Pulsed Laser Desorption on a Scanning Mass Spectrometer*, **Chem. Biomed. Environ. Instrum.** **11** (1981) 57.
15. Cotter, R.J., *Cationized Species in Laser Desorption Mass Spectrometry*, **Anal. Chem.** **53** (1981) 719.
16. Cotter, R.J.; Yergey, A.L., *Thermal desorption of Quaternary Ammonium Salts*, **J. Am. Chem. Soc.** **103** (1981) 1596.
17. Cotter, R.J.; Yergey, A.L., *The Role of Thermally Produced Ions in Mass Spectrometric Desorption Methods*, **Anal. Chem.** **53** (1981) 1306.
18. Fenselau, C.; Cotter, R.; Hansen, G.; Chen, T.; Heller, D., *Middle Molecule Mass Spectrometry*, **J. Chromatog.** **218** (1981) 21.
19. Cotter, R.J.; Fenselau, C.; Hansen, G., *A Thermal Desorption Source and Probe for the MS–50 Mass Spectrometer*, **Chem. Biomed. Environ. Instrum.** **11** (1981) 369.
20. Fenselau, C.; Cotter, R.J., *Mass Spectrometric Analysis of Middle Molecules, Preformed Organic Ions and Zwitterions*, in **IUPAC Frontiers of Chemistry**, K.J. Laidler (ed.), Pergamon Press, Oxford, 1982, pp. 207–216.
21. Yergey, A.L.; Cotter, R.J., *Thermal Desorption Mass Spectrometry of Organic Salts*, **Biomed. Mass Spectrom.** **9** (1982) 286.
22. Cotter, R.J.; Hansen, G.; Jones, T.R., *Mass Spectral Analysis of Long Chain Quaternary Amine Mixtures*, **Anal. Chim. Acta** **136** (1982) 135.
23. Vu, V.T.; Fenselau, C.; Cotter, R.J.; Hansen, G.; Colvin, M., *Characterization of Alkylated Nucleotides by Fast Atom Bombardment Mass Spectrometry*, **Spectroscopy: An International Journal** **1** (1982) 132.
24. Cotter, R.J.; Yergey, A.L., *Thermal Desorption Mass Spectrometry*, **Spectra** **8** (1982) 31.
25. Cotter, R.J., *Thermal Desorption of Organic Solids*, **Trends Anal. Chem.** **1** (1982) 307.
26. Hansen, G.; Heller, D.; Yergey, J.; Cotter, R.J.; Fenselau, C., *A Combination Field Desorption/Fast Atom Bombardment Source for the MS–50 Mass Spectrometer*, **Chem. Biomed. Environ. Instrum.** **12** (1982) 275.
27. Cotter, R.J.; Snow, M.; Colvin, M., *Time Resolved Laser Desorption in Ion Formation from Organic Solids* (A. Benninghoven, Ed.) Springer-Verlag, Berlin (1982) pp. 206
28. Yergey, J.; Heller, D.; Hansen, G.; Cotter, R.J.; Fenselau, C., *Molecular Ion Distributions of Large Molecules*, **Anal. Chem.** **55** (1983) 353.
29. Van Breemen, R.B.; Snow, M.; Cotter, R.J., *Time Resolved Laser Desorption Mass Spectrometry: I. The Desorption of Preformed Ions*, **Int. J. Mass Spectrom. Ion Phys.** **49** (1983) 35.
30. Cotter, R.J.; Van Breemen, R.B.; Yergey, J.; Heller, D., *Thermal, Laser and Fast Atom Desorption*, **Int. J. Mass Spectrom. Ion Phys.** **46** (1983) 395.
31. Tabet, J.–C.; Cotter, R.J., *Time Resolved Laser Desorption Mass Spectrometry: II. The Measurement of the Energy Spread of Laser Desorbed Ions*, **Int. J. Mass Spectrom. Ion Processes** **54** (1983) 151.
32. Fenselau, C.; Cotter, R.J.; Heller, D.; Yergey, J., *Ionization of Middle Mass Molecules: Ejection of Ions from Solution*, **J. Chromatog.** **271** (1983) 3.
33. Heller, D.N.; Yergey, J.; Cotter, R.J., *Doubly-Charged Ions in Desorption Mass Spectrometry*, **Anal. Chem.** **55** (1983) 1310.
34. Cotter, R.J.; Tabet, J.–C., *Laser Desorption Mass Spectrometry: Mechanisms and Applications*, **Int. J. Mass Spectrom. Ion Phys.** **53** (1983) 151.
35. Zaczek, R.; Koller, K.; Cotter, R.; Heller, D.; Coyle, J.T., *N–Acetylaspartylglutamate: An Endogenous Peptide with High Affinity for a Brain “glutamate” Receptor*, **Proc. Nat'l. Acad. Sci.** **80** (1983) 1116.
36. Van Breemen, R.B.; Tabet, J.–C.; Cotter, R.J., *Characterization of Oxygen-Linked Glucuronides by Laser Desorption Mass Spectrometry*, **Biomed. Mass Spectrom.** **11** (1984) 278.
37. Cotter, R.J., *Lasers and Mass Spectrometers (Review)*, **Anal. Chem.** **56** (1984) 485A.
38. Cotter, R.J.; Tabet, J.–C., *Laser Desorption Mass Spectrometry of Organic Molecules*, **American Laboratory** **16** (1984) 86.
39. Tabet, J.–C.; Cotter, R.J., *Laser Desorption Time-of-Flight Mass Spectrometry of High Mass Molecules*, **Anal. Chem.** **56** (1984) 1662.
40. Fenselau, C.; Liberato, D.; Yergey, J.; Cotter, R.J.; Yergey, A.L., *A Comparison of Thermospray and Fast Atom Bombardment as Solution Dependent Ionization Techniques*, **Anal. Chem.** **56** (1984) 2759.
41. Heller, D.N.; Fenselau, C.; Yergey, J.; Cotter, R.J.; Larkin, D., *Large Cluster Ions Desorbed from Organic Salts under Particle Bombardment*, **Anal. Chem.** **56** (1984) 2274.
42. Yergey, J.; Cotter, R.J.; Heller, D.; Fenselau, C., *Resolution Requirements for Middle Molecule Mass Spectrometry*, **Anal. Chem.** **56** (1984) 2262.
43. Cotter, R.J., *Liquid Secondary Ion Time-of-Flight Mass Spectrometry*, **Anal. Chem.** **56** (1984) 2594.
44. Cotter, R.J., *Pyrolysis and Desorption Mass Spectrometry*, in **Analytical Pyrolysis** (K.J. Voorhees, Ed.) Butterworths, London (1984) pp. 42–68.
45. Tabet, J.–C.; Jablonski, M.; Cotter, R.J.; Hunt, J.E., *Time Resolved Laser Desorption: III. The Metastable Decomposition of Chlorophyll a and Some Derivatives*, **Int. J. Mass Spectrom. Ion Processes** **65** (1985) 105.
46. Cotter, R.J.; Larsen, B.S.; Heller, D.N.; Campana, J.E.; Fenselau, C., *Wide Mass Range Scanning for the FAB Mass Spectrometry of Very Large Compounds*, **Anal. Chem.** **57** (1985) 1479.
47. Larsen, B.S.; Yergey, J.A.; Cotter, R.J., *Evaluation of FAB Mass Spectrometry for Assessing the Oxidation States of Disulfide Containing Peptides*, **Biomed. Mass Spectrom.** **12** (1985) 586.
48. Hyver, K.J.; Campana, J.E.; Cotter, R.J.; Fenselau, C., *Mass Spectral Analysis of Murine Epidermal Growth Factor*, **Biochem. Biophys. Res. Commun.** **130** (1985) 1287.
49. Schronk, L.; Cotter, R.J., *The Effect of pH on the Charge State of High Mass Molecular Ions*, **Biomed. Mass Spectrom.** **13** (1986) 395–400.
50. Qureshi, N.; Cotter, R.J.; Takayama, K., *Application of Fast Atom Bombardment Mass Spectrometry and Nuclear Magnetic Resonance on the Structural Analysis of Purified Lipid A*, **J. Microbiol. Meth.** **5** (1986) 65–77.
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52. Cotter, R.J.; Honovich, J.; Olthoff, J., *Time of Flight Instrumentation for Laser Desorption, Plasma Desorption and Liquid SIMS*, in **Secondary Ion Mass Spectrometry SIMS V** (R.J. Colton, Ed.) Springer-Verlag, Berlin (1986) pp. 182–184.
53. Demirev, P.; Alai, M.; Van Breemen, R.B.; Cotter, R.J.; Fenselau, C., *Fragmentation of Heavy Ions (5000–7000 Daltons) Generated by PD and FAB*, in **Secondary Ion Mass Spectrometry SIMS V** (R.J. Colton, Ed.) Springer-Verlag, Berlin (1986) pp. 527–530.
54. Cotter, R.J.; Honovich, J., *Laser Desorption Mass Spectrometry of Organic Biomolecules*, in **Proceedings of the 10th International Mass Spectrometry Conference**, Swansea (J.H. Beynon, Ed.) John Wiley, Chichester (1986) pp.

55. Cotter, R.J.; Honovich, J.; Olthoff, J.; Demirev, P.; Alai, M., *Laser and Plasma Desorption: Matrices and Metastables in Time-of-Flight Mass Spectrometry*, in **Ion Formation from Organic Solids IFOS III**, Munster (A. Benninghoven, Ed.) Springer-Verlag, Berlin (1986) pp. 142–146.
56. Fenselau, C.; Cotter, R.J., *Middle Molecules: Molecular and Fragment Ions at 1,000–14,000 amu*; in **Mass Spectrometry in the Analysis of Large Molecules** (C.J. McNeal, Ed.) John Wiley, Chichester (1986) pp 89–105.
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58. Kappler, K.; Hai, T.T.; Cotter, R.J.; Hyver, K.J.; Hampton, A., *Isozyme-Specific Enzyme Inhibitors: 11. L-Homocysteine-ATP S-C5' Covalent Adducts as Inhibitors of Rat Methionine Adenosyltransferases*, **J. Med. Chem.** **29** (1986) 1030.
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60. Gale, P.J.; Bentz, B.L.; Chait, B.T.; Field, F.H.; Cotter, R.J., *Reduction in Liquid Secondary Ion Mass Spectrometry: Comparison of the Fission Fragment and Liquid Secondary Ion Mass Spectra of Organic Dye-stuffs*, **Anal. Chem.** **58** (1986) 1070.
61. Cotter, R.J.; Honovich, J.; Qureshi, N.; Takayama, K., *Laser Desorption Analysis of Lipid A Structures from Bacterial Membranes*, **Proceedings of the 11th Annual Japanese Society Meeting on Biomedical Mass Spectrometry** (1986).
62. Qureshi, N.; Takayama, K.; Honovich, J.; Cotter, R.J., *Purification and Structural Analysis of Lipopolysaccharides from Escherichia coli and Salmonella minnesota*, **J. Immun. Immunopharm.** **6** (1986) 154.
63. VanBremen, R.; Fenselau, C.; Cotter, R.J.; Curtis, A.J.; Connolly, G., *Derivatives of Dicyclopentadiene in Ground Water*, **Biomed. Environ. Mass Spectrom.** **14** (1987) 97–102.
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65. Della-Negra, S.; Becker, O.; Cotter, R.; LeBeyec, Y.; Monart, B.; Standing K.; Wien, K., *Influence of the Charge State of 1.16 MeV/u Incident Ions on the Desorption Process*, **Journal de Physique** **48** (1987).
66. Cotter, R.J., *Laser Mass Spectrometry: An Overview of Techniques, Instruments and Applications*, **Anal. Chim. Acta** **195** (1987) 45–59.
67. Olthoff, J.K.; Honovich, J.P.; Cotter, R.J., *Liquid Secondary Ion Time-of-Flight Mass Spectrometry*, **Anal. Chem.** **59** (1987) 999–1002.
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70. Olthoff, J.K.; Lys, I.; Demirev, P.; Cotter, R.J., *Modification of Wiley-McLaren TOF Analyzers for Laser Desorption*, **Anal. Instrum.** **16** (1987) 93–115.
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73. Demirev, P.; Fenselau, C.; Cotter, R.J., *High Mass Fragmentation: Matrix Effects in Plasma Desorption Mass Spectrometry*, **Int. J. Mass Spectrom. Ion Processes** **78** (1987) 251–258.
74. Cotter, R.J., *Workshop on Time-of-Flight Mass Analysis*, **Anal. Instrum.** **16** (1987) 225.
75. Balasanmugam, K.; Viswanadham, S.K.; Hercules, D.M.; Cotter, R.J.; Heller, D.N.; Benninghoven, A.; Sichtermann, W.; Anders, V.; Keough, T.; Macfarlane, R.D.; McNeal, C.J., *Comparison of Laser, Plasma Desorption, Fast Atom Bombardment, Secondary Ion, and Field Desorption Mass Spectra of a Series of Internal Salts*, **Applied Spectroscopy** **41** (1987) 821–829.
76. Hara, H.; Cotter, R.J., *Assessment of the Effect of Growth Temperature on the Lipid Composition of Serratia marcescens Using Laser Desorption Mass Spectrometry*, **Rapid Commun. Mass Spectrom.** **1** (1987) 103–104.
77. Heller, D.N.; Cotter, R.J.; Fenselau, C.; Uy, O.M., *Profiling of Bacteria by Fast Atom Bombardment Mass Spectrometry*, **Anal. Chem.** **59** (1987) 2806–2809.
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