

## VITAE

### LON JAY MATHIAS

- ADDRESS: Department of Polymer Science #7 Mathias Hollow  
University of Southern Mississippi Purvis, MS 39475  
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(601) 266-4871, 266-4868
- PERSONAL: Born, December 29, 1948  
Married, Belinda Jo Lynch Mathias  
Four children
- EDUCATION: Ph.D. University of Michigan, 1976, Chemistry, C. G.  
Overberger  
M.S. University of Michigan, 1974, Chemistry, C. G.  
Overberger  
B.S. with honors, University of Iowa, 1971, Chemistry, J. K.  
Stille
- MEMBER OF: American Chemical Society and its Divisions of: Polymer  
Chemistry, Polymeric Materials: Science and Engineering,  
Chemical Education, Organic Chemistry; Sigma Xi,  
Mississippi Academy of Science
- EXPERIENCE: September, 1989 - present, Professor, Department of  
Polymer Science, University of Southern Mississippi  
  
September, 1983 - August, 1989, Associate Professor,  
Department of Polymer Science, University of Southern  
Mississippi  
  
September, 1981 - August, 1983, Assistant Professor,  
Department of Polymer Science, University of Southern  
Mississippi  
  
September, 1977 - August, 1981, Assistant Professor,  
Department of Chemistry, Auburn University, Alabama  
  
March, 1976 - September, 1977, Post-doctoral Research  
Fellow and DHEW Trainee, University of California-San  
Diego, La Jolla, California

### PROFESSIONAL ACTIVITIES

Referee for:  
Journal of Polymer Science  
Macromolecules  
Makromolekular Chemie

Reactive Polymers  
National Science Foundation  
Journal of the American Chemical Society  
Industrial and Engineering Chemistry  
Petroleum Research Fund of the ACS  
Member, Editorial Boards of:  
Journal of Polymer Science, Chemistry  
Macromolecular Syntheses  
Polymer Composites

Past:

Faculty Member, 1984 Mississippi Governor's School Recipient  
Visiting Professor, University of Northern Iowa, April 9-11, 1985  
1988 USM Applied Research Award  
Co-organizer, Symposium on Advances in Polymer  
Characterization, Honolulu, Hawaii, December, 1989  
Chairman, Mississippi Section, American Chemical Society, 1991  
1994 USM Basic Research Award  
2002-03 Member, Directorate for Mathematical and Physical Sciences  
Advisory Committee

FUNDING: Over \$28,000,000 over 34 years

DISSERTATIONS AND THESES:

Six MS, six Honor's BS theses and 45 Ph.D. dissertations

RESEARCH:

High Performance Polymers and Composites  
Solid State NMR of Polymers  
Polymerizations in Organized Media and at Interfaces  
Supernucleophilic Pyridine Polymer Catalysts and Reactions  
New Liquid Crystalline Polymers and Copolymers  
Synthesis of New Functional Monomers and Polymers  
Multifunctional Monomers and Polymers

## EDUCATIONAL OUTREACH:

Co-Founder, Director and guiding force for the Macrogalleria and the Polymer Science Learning Center

The mission of the Macrogalleria is to provide working knowledge of polymers and related concepts to students of all levels, from K-12 to graduate-level and the general public as well, and to do so on multiple levels, so that the program will be both informative and entertaining to both beginners and more advanced students of polymer science. This program aims not only to provide an introduction to polymer science for those pursuing scientific careers, but to provide information in such a way that will interest the non-scientist as well, to the end of helping to create a more scientifically literate general public.

Honors awarded to the Macrogalleria.



[BBC Education Web Guide](#)

Founder and Director of Polymer Science Learning Center at the University of Southern Mississippi – 1999 to present.

Expansion program that build on the success of the Macrogalleria with an expanded portfolio of material The 6 additional sites have content aimed at teachers and students.

expeditions  
educational resources  
activities & demos

matworld  
polydelphia  
polymers for kids

## Publications

PAPERS: Over 280 refereed papers, 450 preprints  
PATENTS: Over 25 issued  
TALKS: Over 500 oral presentations  
BOOKS: Editor of two symposia collections; coauthor of two user manuals  
and three spectral collections

## Refereed Publications

1. "Synthesis and Publication Properties of Thermally Stable Ladder Polymers" Imai, K.; Kurihara, M.; Mathias, L.; Wittman, J.; Alston, W. B.; Stille, J. K. *Macromolecules*, 1973, 6, 158.
2. "Synthesis of Formamidines and Benzimidazoles". Mathias, L. J.; Overberger, C. G.; *Synth. Commun.*, 1975, 5, 461.
3. "Improved Synthesis of 5(6)-Vinylbenzimidazole: Polymerization Studies". Overberger, C. G.; Mathias, L. J.; *J. Polym. Sci. Polym. Chem. Ed.*, 1978, 16, 627.
4. "Developments in the Use of Polymers as Reactants in Organic Reactions". Overberger, C. G.; Guterl, A. C.; Kawakami, Y.; Mathias, L. J.; Meenakshi, A.; Tomono, T. *Pure and Applied Chem.*, 1978, 50, 309.
5. "Polydepsipeptides 6. Synthesis of Sequential Polymers Containing Varying Ratios of L-Alanine and S-Lactic Acid" Mathias, L. J.; Fuller, W. D.; Nissen, D.; Goodman, M. *Macromolecules*, 1978, 11, 534.
6. "Mass Spectral Behavior of 5(6)-Substituted Benzimidazoles and 1,3-Diazaazulene" Mathias, L. J.; Overberger, C. G. *J. Org. Chem.*, 1978, 43, 3518.
7. "<sup>13</sup>C NMR Chemical Shifts of 5(6)-Substituted Benzimidazoles and 1,3-Diazaazulene" Mathias, L. J.; Overberger, C. G. *J. Org. Chem.*, 1978, 43, 3526.
8. "Synthesis of Formamidine-Containing Polymers from Aromatic Diamines" Mathias, L. J.; Overberger, C. G. *J. Polym. Sci. Polym. Chem. Ed.*, 1979, 17, 1287.
9. "Esterification and Alkylation Reactions Employing Isoureas" Mathias, L. J.; *Synthesis*, 1979, 561.
10. "Crown Ethers in Polymer Chemistry" Mathias, L. J.; Al-Jumah, K. B. *Polym. News*, 1979, 6, 9.
11. "N-Alkylations of Benzimidazoles and Benzotriazole via Phase Transfer Catalysis" Mathias, L. J.; Burkett, D. *Tetrahedron Lett.*, 1979, 4709.
12. "Synthetic Applications of Isoureas. A Review" Mathias, L. J. *Org. Prep. Proc. Intern.*, 1980, 12, 311.

13. "Simple Synthesis of 1,3-Bis(perfluoroacyl)azulenes and 1,3-Azulenedicarboxylic Acid" Mathias, L. J.; Overberger, C. G. *J. Org. Chem.*, 1980, 45, 1701.
14. "Polymers Containing Crown Ethers. Polyureas from Diisocyanates and 1,10-Diaza-18-Crown-6" Mathias, L. J.; Al-Jumah, K. B. *J. Polym. Sci. Polym. Chem. Ed.*, 1980, 18, 2911.
15. "Synthesis and Cyclopolymerization of N-Methacryloyldehydroalanine Methyl Ester" Mathias, L. J. *J. Polym. Sci. Polym. Lett. Ed.*, 1980, 18, 665.
16. "Esterolytic Catalysis by Polymers. Contributions of C. G. Overberger" Mathias, L. J. *Polym. News*, 1980, 7, 13.
17. "Sequential Copolymers of Oxyethylene and Polymethylenedithiols" Mathias, L. J.; Canterberry, J. B. *Macromolecules*, 1980, 13, 1723.
18. "Polydepsipeptides VIII. Configurational Contributions to the Conformation of Polydepsipeptides and Analogous Polypeptides" Becketl, W. J.; Mathias, L. J.; Goodman, M. *Macromolecules*, 1981, 14, 203-207.
19. "Crown Ethers and Phase Transfer Catalysis in Polymer Chemistry" Mathias, L. J.; *J. Macromol. Sci. Chem.*, 1981, A15, 853; *Interfacial Synthesis*, Carraher, C. E. Jr.; Preston, J., Eds.; Marcel Dekker: New York, 1982; pp 173-196.
20. "Synthesis of N-Hydroxy-N-Methylmethacrylamide and Its Use in the Macromer Synthesis" Kawakami, Y.; Inagi, K.; Yamashita, Y.; Mathias, L. J. *J. Polym. Sci. Polym. Lett. Ed.*, 1981, 19, 629.
21. "New Phase Transfer Catalysts Containing Oxyethylene Oligomers" Mathias, L. J.; Canterberry, J. B. *Cyclopolymerization and Polymers with Chain-Ring Structures*; Butler, G. B.; Kresta, J., Eds.; American Chemical Society: Washington, 1982; pp 138-148.
22. "Polyacetal Formation of the Monovinyl Ether of Tetraethylene Glycol" Mathias, L. J.; Canterberry, J. B. *J. Polym. Sci. Polym. Chem. Ed.*, 1982, 20, 2731.
23. "Synthesis and Polymerization of Mono- and Divinyl Ethers of Oligooxyethylenes" Mathias, L. J.; Canterberry, J. B.; South, M. J. *Polym. Sci. Polym. Lett. Ed.*, 1982, 20, 473.
24. "Phase Transfer Catalysis in Polymer Chemistry--A Conference Report" Mathias, L. J.; Carraher, C. E. Jr. *Polym. News*, 1982, 8, 254.
25. "Comments on 'Synthesis of Hydroxyl-Terminated Polycarbonates of Controlled Number-Average Molecular Weight'" Anderson, K. S.; Mathias, L. J.; McGrath, J. E. *J. Polym. Sci. Polym. Lett. Ed.*, 1983, 21, 445.
26. "Further Examination of the Microemulsion Molecular Weight Method for Polyoxyethylene" Mathias, L. J.; Moore, D. R.; Johnson, C. B. *J. Polym. Sci. Polym. Lett. Ed.*, 1983, 21, 711.

27. "Sulfur-Substituted Polyoxyethylenes. Sequential Ether-Thioether Copolymers" Mathias, L. J.; Canterberry, J. B. In *Crown Ethers and Phase Transfer Catalysis in Polymer Chemistry*; Mathias, L. J.; Carraher, C. E. Jr. Plenum: New York, 1984; pp 359-370.
28. "Substituted Polyamides as Precursors for Alkyl and Alkenyl Polybenzoxazoles" Mathias, L. J.; Ahmed, S. U.; Livant, P. D. in *New Monomers and Polymers*; Culbertson, B. W.; Pittman, C. U. Plenum: New York, 1984; pp 55-65.
29. "A Two-step Synthesis of Alkyl and Alkenyl Polybenzoxazoles" Mathias, L. J.; Ahmed, S. U.; Livant, P. D. *Macromolecules*, 1985, 18, 616.
30. "Synthesis, Cyclopolymerization and Cyclocopolymerization of 4-(Diallylamino)-pyridine: A New Monomer" Mathias, L. J.; Vaidya, R. A.; Bloodworth, R. H. *J. Polym. Sci., Polym. Lett. Ed.*, 1985, 23, 289.
31. "Thermal Depolymerization Studies of Poly(dimethylenebenzoxazoles)" Mathias, L. J.; Ahmed, S. U. *Polym. Bulletin*, 1985, 13, 145.
32. "New Tools for Coatings Analysis" Mathias, L. J. *Proc. 12th Water-Borne and Higher-solids Coatings Symposium*, 1985, 25-43.
33. "A Simple, Mild, High-Yield Synthesis of BOC-Amino Acids in Water" Mathias L. J.; Vaidya, R. A. *J. Miss. Acad. Sci.*, 1985, 29, 13.
34. "A Simple, Inexpensive Stirrer for Spectrometer Cuvettes," Vaidya, R. A.; Hermes, R. E.; Mathias, L. J.; Bridges, J. L. *Amer. Lab.*, July, 1985, 84.
35. "Isomunchnone Polymerization. Poly(1-oxy-3-lactam vinylenes) From 1-(2-Chloroacetyl)Lactam Through a Mesoionic Intermediate" Mathias, L. J.; Moore, D. R. *J. Amer. Chem. Soc.*, 1985, 107, 5817.
36. "Analyzing Coatings with Fourier Transform Spectroscopy," Mathias, L. J. *Modern Paint and Coatings*, November, 1985, 38.
37. "Inverse Phase Transfer Catalysis. First Report of a New Class of Interfacial Reactions" Mathias, L. J.; Vaidya, R. A. *J. Amer. Chem. Soc.*, 1986, 108, 1093.
38. "Mesoionic Polymerization. Poly(oxyvinylene)lactams From Chloroacetyl-Lactams Through an Isomunchnone Intermediate" Moore, D. R.; Mathias, L. J. *Macromolecules*, 1986, 19, 1530.
39. "Synthesis and Characterization of a Novel Comb Polymer Derived From A Difunctional Monomer: Poly(methyl-2-decanamidopropenoate) [Poly(N-decanoyldehydroalanine methyl ester)]" Mathias, L. J.; Hermes, R. E. *Macromolecules*, 1986, 19, 1536.
40. "On Predicting Free Radical Polymerizability of Allyl Monomers. MINDO/3 and <sup>13</sup>C NMR Results" Vaidya, R. A.; Mathias, L. J. *J. Polym. Sci. Polym. Symp.*, 1986, 74, 422.

41. "Polymeric Supernucleophilic Pyridine Catalysts. Homogeneous Esterolysis of p- Nitrophenyl Esters," Vaidya, R. A.; Mathias, L. J. J. Amer. Chem. Soc., 1986, 108, 5514.
42. "Molecular Composites via In Situ Polymerization: Poly(phenylene terephthalamide)-Nylon 3," Moore, R. D.; Mathias, L. J. J. Appl. Polym. Sci., 1986, 32, 6299.
43. "Amide Derivatives of Poly(3,4-dimethylenepyrrolidine): Synthesis, Characterization and Complexation Studies," Mathias, L. J.; Vaidya, R. A.; Halley, R. J. J. Appl. Polym. Sci., 1987, 33, 1157.
44. "Fundamental Polymer Chemistry of Acrylics and Vinyls," Mathias, L. J. Proc. FBI Internat. Symp. On Anal. Ident. Of Polymers, published by the FBI/USDJ, US Government Printing Office, Washington, DC, 1987, pp. 25-38.
45. "Cyclobutene Containing Monomers and Polymers. Polymerization and Crosslinking via Thermally Generated Butadiene Units," Mathias, L. J.; Powell, D. G. Macromolecules, 1987, 20, 702.
46. "A New Chiral Peptide Analog: Synthesis and Characterization of Poly[4(S)-2- propyl-4-carboxymethyl-2-oxazoline]," Hermes, R. E.; Mathias, L. J. J. Polym. Sci. Polym. Lett. Ed., 1987, 25, 161.
47. "Monolayer Polymerization of Methyl 2-Octadecanamidopropenoate: An Amphiphilic Captodative Monomer Based on Dehydroalanine," Mathias, L. J.; Hermes, R. E.; Virden, Jr., J. W. Macromolecules, 1987, 20, 901.
48. "New 2-Pyridone Derivatives via 1,3-Dipolar Cycloaddition of Novel Mesonionic Compounds," Moore, D. R.; Mathias, L. J. J. Org. Chem., 1987, 52, 1599.
49. "Novel Synthesis of a Hindered Trisubstituted Dehydroalanine Derivative and Its Copolymerization with Methyl Acrylate" Hermes, R. E.; Mathias, L. J. Polym. Bulletin, 1987, 17, 189.
50. "Polymerization of N-(p-Aminobenzoyl)Caprolactam: Block and Alternating Copolymers of Aromatic and Aliphatic Polyamides" Mathias, L. J.; Moore, D. R.; Smith, C. A. J. Polym. Sci. Polym. Chem. Ed., 1987, 25, 2699-2709.
51. "High Performance Polymers and Composites IV. Copolymers Containing Benzoxazole Units" Mathias, L. J.; Livant, P. D.; Ahmed, S. U. J. Polym. Sci. Polym. Chem. Ed., 1987, 25, 2711-2716.
52. "Functional Methacrylate Monomers: Simple Synthesis of Alkyl  $\alpha$ -(Hydroxymethyl) Acrylates" Mathias, L. J.; Kusefoglu, S. H.; Kress, A. O. Macromolecules 1987, 20, 2326-2328.
53. "New Difunctional Methacrylate Ethers and Acetals: Readily Available Derivatives of  $\alpha$ -(Hydroxymethyl)acrylates" Mathias, L. J.; Kusefoglu, S. H. Macromolecules, 1987, 20, 2039.

54. "A New Nonhydrolyzable Crosslinking Agent Containing Two Methacrylate Units Linked Through the  $\alpha$ -Methyl Carbons" Mathias, L. J.; Kusefoglou, S. H. *J. Polym. Sci., Polym. Lett. Ed.*, 1987, 25, 451-453.
55. "Polymers from Captodative Dehydroalanines: 2-Alkanamide Derivatives of Methyl Propenoate" Mathias, L. J.; Hermes, R. E. *Macromolecules*, 1987, 21, 11-13.
56. "Copolymerization of 4-Diallylaminopyridine and Acid-base Behavior of the Copolymers" Mathias, L. J.; Cei, G. *Macromolecules*, 1987, 20, 2645-2650.
57. "Synthesis and Characterization of in situ Anionically Polymerized p-Aminobenzoylcaprolactam Using Di- and Trifunctional Initiators" Sikes, A. M.; Mathias, L. J. *Polym. Bull.*, 1987, 18, 397-401.
58. "Ether-thioether Copolymers Containing Pendant Carboxylates: Michael Polyaddition of Alkyl Dithiols and New Bisacrylate Ethers" Mathias, L. J.; Kress, A. O. *Polym. Commun.*, 1988, 29, 302-304.
59. "Star-branched Nylon 6 and Nylon 6-Aramid Copolymers" Sikes, A. M.; Moore, D. R.; Smith, C. A.; Mathias, L. J. *Proceedings of the 43rd SPI Composites Conference*, 1988.
60. "Cyclopolymerization of the Ether of Methyl  $\alpha$ -(Hydroxymethyl)acrylate" Mathias, L. J.; Kusefoglou, S. H.; Ingram, J. E. *Macromolecules*, 1988, 21, 545-546.
61. "Multifunctional Captodative Monomers: Urea-containing Dehydroalanines" Mathias, L. J.; Kurz, D. W.; Viswanathan, T. J. *Polym. Sci. Polym. Lett. Ed.*, 1988, 26, 233.
62. "Molecular Composites Based on Thermosetting Matrix Polymers: Poly(p-Phenyleneterephthalamide)-Epoxy" Moore, D. R.; Mathias, L. J. *Polym. Composites*, 1988, 9, 144-150.
63. "Solid State NMR Characterization of Textiles: Qualitative and Quantitative" Colletti, R. F.; Mathias, L. J. *J. Appl. Polym. Sci.*, 1988, 35, 2069-2074.
64. "Linear AB and AA-BB Polyamides with Backbone Aryl, Alkyl and Alkenyl Units" Ahmed, S. U.; Livant, P. D.; Sikes, A. M.; Mathias, L. J. *J. Polym. Sci.; Part A: Polym. Chem.*, 1988, 26, 2345-2354.
65. "Star-branched Nylon 6: Effect of Branching and Crosslinking on Polymer Properties" Mathias, L. J.; Sikes, A. M. in Ray A. Dickie, ed., *Chemistry, Properties and Applications of Crosslinking Systems*; American Chemical Society, Washington, DC, 1988, pp 66-76.
66. "Variable Temperature Solid State NMR of Side-chain Crystalline Comb Polymers" Mathias, L. J. *Polym. Commun.*, 1988, 29, 352-354.
67. "Synthesis and Characterization of 1,2-Cyclobutenedicarboxamides: Thermally Generated Polymers and Diels-Alder Adducts" Powell, D. G.; Mathias, L. J. *Macromolecules*, 1988, 21, 1911-1915.



68. "15N Solid State CP/MAS NMR of Aramid-Containing Nylon 6 by in situ Polymerization with Benzoyl Caprolactam Derivatives" Powell, D. G.; Sikes, A. M.; Mathias, L. J. *Macromolecules*, 1988, 21, 1533-1536.
69. "A Low Volume Insert for Solid State Magic Angle Spinning NMR" Mathias, L. J.; Powell, D. G.; Bridges, J. L. *J. Magn. Reson.*, 1988, 77, 566-568.
70. "Facile Synthesis of  $\alpha$ -Deuterated Acrylates and Activated Vinyls," Mathias, L. J.; Colletti, R. F. *Macromolecules*, 1988, 21, 857-858.
71. "Natural Abundance 15N CP/MAS NMR of Nylons" Mathias, L. J.; Powell, D. G.; Sikes, A. M. *Polym. Commun.*, 1988, 29, 192-193.
72. "A Simple One-Step Synthesis of Unsaturated Copolyesters" Mathias, L. J.; Kress, A. O. *J. Appl. Polym. Sci.*, 1989, 38, 1037-1051.
73. "Copolymers of Styrene and Methyl  $\alpha$ -Hydroxymethylacrylate" Kress, A. O.; Mathias, L. J.; Cei, G. *Macromolecules*, 1989, 22, 537-546.
74. "Toward a Universal PC-Based Spectrometer Data Station" Casey, P. K.; Jarrett, W. L.; Mathias, L. J. *Amer. Lab.*, March, 1989, 25.
75. "In situ Formation of New Crosslinking Agents from Acrylate Derivatives and Bisepoxides" Lee, S.; Thames S. F.; Mathias, L. J. *J. Polym. Sci.; Part A: Polym. Chem.*, 1990, 28, 525-549.
76. "Proposed Uses of Laser Light Scattering Instruments for Polymerization Studies" Mathias, L. J.; Hoyle, C. E.; McLaughlin, K. W.; McManus, S. P.; Caruthers, J. M.; Runge, M. L. *Proceedings of the NASA Laser Light Scattering Advanced Technology Development Workshop*, 1989, 215-227.
77. "Monomer and Polymers Derived from 2,6-Bis((dimethylamino)formyl)-4-(diallylamino) pyridine" Mathias, L. J.; Kloske, T.; Cei, G. *Macromolecules*, 1989, 22, 4615-4621.
78. "15N T1 Measurements of Semicrystalline Nylon 6" Powell, D. G.; Mathias, L. J. *Macromolecules*, 1989, 22, 3812-3814.
79. "15N NMR Powder Spectra of Semicrystalline Nylon 6" Powell, D. G.; Mathias, L. J. *Polym. Comm.*, 1990, 31, 58-60.
80. "Characterization of Nylon 6 by 15N Solid State Nuclear Magnetic Resonance" Powell, D. G.; Mathias, L. J. *J. Am. Chem. Soc.*, 1990, 112, 669-675.
81. "Natural Abundance 15N CP/MAS NMR of Solid Polyamides: A Technique Sensitive to Crystalline Composition and Conformation in the Solid State" Powell, D. G.; Sikes, A. M.; Mathias, L. J. *Polymer*, 1991, 32, 2523.
82. "Solid State 15N NMR of 15N-labeled Nylon 6 and Nylon 11" Mathias, L. J.; Powell, D. G.; Autran, J. P.; Porter, R. S. *Mat. Sci. Eng.*, 1990, A126, 253; reprinted in "Science of Composite Interfaces," Grandt, R. G.; Fishman, S.

G.; Murday, J. S.; Rajapakse, Y.; Vasudevan, A. K.; Wynne, K. J.; eds. Elsevier Applied Science, 1990, pp. 253-263.

83. "Synthesis and Polymerization of Ethyl  $\alpha$ -chloromethylacrylate and Related Derivatives," Warren, S. C.; Mathias, L. J.; J. Polym. Sci., Part A: Polym. Chem., 1990, 28, 1637-1648.
84. "Polymeric Catalysts Based on 4-(N,N-Diallylamino)pyridine," Cej, G.; Mathias, L. J.; Macromolecules, 1990, 23, 4127-4134.
85. "<sup>15</sup>N NMR Characterization of Multiple Crystal Forms and Phase Transition in Polyundecanamides," Mathias, L. J.; Powell, D. G.; Autran, J. -P; Porter, R. S. Macromolecules, 1990, 23, 963-967.
86. "Polymeric Biomimetic Catalysts Based on 4-Diallylamino pyridine," Mathias, L. J.; Vaidya, R. A.; Cej, G. Biomimetic Polymers, Gebelein, C. G. ed., Plenum Press, New York, 1990, pp 39-70.
87. "Mechanism Study of the Base-Catalyzed Ether Formation Involving  $\alpha$ -(Hydroxymethyl)acrylates," Colletti, R. F.; Halley, R. J.; Mathias, L. J. Macromolecules, 1991, 24, 2043-2047.
88. "t-Butyl  $\alpha$ -Hydroxymethylacrylate and Its Ether Dimer: Multifunctional Monomers Giving Polymers with Easily Cleaved Ester Groups," Mathias, L. J.; Huang, S.; Warren, R. M. Macromolecules, 1991, 24, 2036-2042
89. "Improvement of Wood Properties by Impregnation with Multifunctional Monomers," Mathias, L. J.; Lee, S.; Wright, J. R.; Warren, S. C. J. Appl. Polym. Sci., 1991, 42, 55-67.
90. "Copolymers of 2-Vinyl-4,4-Dimethylazlactone with Styrene and Ethyl  $\alpha$ -Hydroxymethylacrylate," Mathias, L. J.; Muthiah, J. J. Polym. Sci: Part A: Polym. Chem., 1991, 29, 29-37.
91. "Solid-State <sup>13</sup>C NMR Study of Polyethylene Reactor Powders," Jarrett, W. L.; Mathias, L. J.; Porter, R. S. Macromolecules, 1990, 23, 5164-5166.
92. "Radical Homopolymerization of a Trisubstituted Alkene: 1-Cyclobutenecarboxylic Acid and Its Polymer," Casey, P. K.; Mathias, L. J. Polym. Commun., 1991, 32, 27-29.
93. "Acrylate-Containing Oligoether-Ester Crosslinking Agents with Controlled Molecular Weights via End-Group Termination," Mathias, L. J.; Dickerson, C. W. Macromolecules, 1991, 24, 2048-2053.
94. "Multifunctional Acrylate Monomers, Dimers and Oligomers: Contact Lenses to Wood-Polymer Composites," Mathias, L. J.; Kusefoglu, S. H.; Kress, A. O.; Lee, S.; Wright, J. R.; Culberson, D. A.; Warren, S. C.; Warren, R. M.; Huang, S.; Lopez, D. R.; Ingram, J. E.; Dickerson, C. W.; Muthiah, J.; Halley, R. J.; Colletti, R. F.; Cej, G.; Geiger, C. C. Makromol. Chem. Symp., 1991, 41, 153-167.

95. "Multifunctional Captodative Monomers: Urea-Containing Dehydroalanines and Their Polymers," Kurz, D. W.; Mathias, L. J. *Macromolecules*, 1991, 24, 35-41.
96. "Effect of Chemical Structure of Allyl Ethers on Polymerization and Properties of Multifunctional Acrylate Systems," Jensen, E. S.; Gatenholm, P.; Nanguneri, S.; Mathias, L. J. *J. Appl. Polym. Sci.*, 1991, 42, 2681-2689.
97. "Characterization of Methyl  $\alpha$ -Hydroxymethylacrylate Ether Cyclopolymer Using Nutation NMR," Mathias, L. J.; Colletti, R. F.; Bielecki, A.; *J. Am. Chem. Soc.*, 1991, 113, 1550-1553.
98. "Hyperbranched Poly(siloxysilanes)," Mathias, L. J.; Carothers, T. W.; *J. Am. Chem. Soc.*, 1991, 113, 4043-4044.
99. "Synthesis and Wide-Line NMR Studies of  $\alpha$ -<sup>2</sup>H-labeled Polyacrylates and Polyacrylonitrile," Mathias, L. J.; Colletti, R. F. *Macromolecules*, 1991, 24, 5515-5521.
100. "Wide-Line Deuterium NMR Studies of N-Deuterated Nylon 6, Nylon 11 and N-n- Propyl Stearamide," Colletti, R. F.; Muthiah, J.; Mathias, L. J. *Polym. Commun.*, 1991, 32, 332-335.
101. "A Software Module for Processing NMR Data on an MS-DOS Microcomputer," Mathias, L. J.; Casey, P. K.; Jarrett, W. L. *Amer. Lab.*, October 1991, 40.
102. "2,5-Dimethoxy- and 2,5-Di-n-Butoxy-1,4-Benzoquinone Reactions and Polymerization with Amines," Colletti, R. F.; Stewart, M. J.; Taylor, A. E. MacNeill, N. J.; Mathias, L. J. *J. Polym. Sci.: Part A: Polym. Chem.*, 1991, 29, 1633-1638.
103. "Poly(di-1-adamantyl fumarate), a Thermally Stable Substituted Polymethylene," Mathias, L. J.; Muir, A. V. G.; Reichert, V. R. *Macromolecules*, 1991, 24, 5232-5233.
104. "Solid-State <sup>2</sup>H NMR: Overview with Examples," Colletti, R. F.; Mathias, L. J. Ch. 2 in *Solid State NMR of Polymers*, Plenum Publishing, New York, NY, 1991.
105. "New Acrylate-Containing Dimers and Oligomers for Crosslinking Vinyl Polymers," Mathias, L. J.; Kusefoglu, S. H.; Kress, A. O.; Lee, S.; Dickerson, C. W.; Thames, S. F. *Polym. News*, 1991, 17, 36.
106. "Solid State <sup>15</sup>N NMR Investigation of Nylon 12," Mathias, L. J.; Johnson, C. G. *Macromolecules*, 1991, 24, 6114.
107. "A Lucky Accident...or Was It?," Mathias, L. J. *ChemTech*, December 1991, 718.
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