

ADEL F. HALASA

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Education

University Of Akron: Akron, OH; special Polymer courses 1979

Purdue University: West Lafayette, IN; Ph.D. 1964

Butler University: Indianapolis, IN; MS Organic Chemistry 1959

Oklahoma University: Norman, OK; BS Chemistry 1955

Work Experience

- 1983-2009 R&D Fellow (lead scientific investigator) Goodyear Tire & Rubber Company, Akron, OH.
- 1979 (on loan to the Kuwaiti Government from the Firestone Tire & Rubber Co). Established a polymer program at the Kuwait Institute for Scientific Research (KISR); Established a polymer program at Kuwait University; Established and staffed the first Corrosion Laboratory in Gulf region which served Industries in the region in collaboration with the Massachusetts Institute of Technology.
- Senior Research Associate (lead scientific investigator) Firestone Tire & Rubber Co. following positions as Research Associate and Group Leader in materials investigation and development.
- 1990-2008 Guest Lecturer: Massachusetts Institute of Technology, Cambridge, MA; Purdue University, West Lafayette, IN; Case-Western Reserve University, Cleveland OH; University of Akron, Akron, OH; University of Minnesota, University of Wisconsin, Jordan University. Plenary speaker at International Rubber conferences in India, Japan, France and Germany; Presentations at Universities in France, China, India, and Germany.

Career Highlights

- Established the first facilities in Kuwait for the use of sulfur in asphalt road applications.
- Director (simultaneously) of Petroleum, Petro-Chemical, and Material Science Departments at KISR with a total budget of 20 million KD (\$80 mm USD); funded 30% of institute budget through personal interaction with Kuwaiti Industrial concerns (e.g. Kuwait Petro-Chemical Col, Kuwait Oil Co).

- Arranged and chaired the First Arab Sulfur conference in the Middle East, Kuwait City, 1982, and the first United Nations Conference on Thermoplastic Elastomers, Amman, Jordan in 1983.
- 1998, 2000, 2005 Goodyear Inventor of the Year awards.
- 2004 Purdue distinguished Alumni Award; Science Department, Purdue University.
- 2004 Purdue University Dept of Chemistry, visiting lecturer 2004.
- 1997 Awarded Charles Goodyear Medal by the American Chemical Society Rubber Division
- 1988 Intellectual Property Award; Intellectual Property Institute, Washington DC for the discovery of SIBRFLES, the elastomer used in the original Goodyear Aqua Tred tire.
- 1983 awarded the Kuwait Foundation Grant for contributions to Kuwait Industries.
- Elected Chairman of the American Chemical Society, Akron Section.
- 1983 Kuwait University Department of Chemistry; Lecture on Polymer properties
- 185 US Patents assigned to the Firestone Tire & Rubber Co.
- 150 US Patents assigned to the Goodyear Tire & Rubber Co.

Publications and Recent Patent Summary

- 104 publications in refereed Journals
- 3 US Patents Issued in 2008 for The Goodyear Tire & Rubber Co.
- 8 US Patents in 2007 for The Goodyear Tire & Rubber Co.
- 7 US Patents in 2006 issued for Goodyear Tire & Rubber Co.
- 12 US Patents in 2005 for Goodyear Tire & Rubber Co.

Personal

Widowed with three daughters.

Recent Publications. and Areas of interest

Last ten years focused on the synthesis and preparation of Rubber Chemical Anti-Oxidants Stabilizers Anti-Ozone

- Anti- degradants ,Anti reversion and Insoluble and soluble sulfur compounds for tire application
- Elastomer synthesis and Polymer blends, filler Polymer interaction Tire Rubber adhesives. Liner components
- Ionic Liquid application to the Rubber and Plastic enhance performance.
- Organic Synthesis of Chemical Compounds small molecule for medicinal use and testing
- Organometallic compounds for polymerization catalyst and hydrogenation

- Published papers in the field of polymer Morphology, structures and surface science

(1) Chenyang Liu, Adel F Halasa Roland Keunings and Christian Bailly Probe. Rheology a Simple method to Test the Tube Motion in Press

(2.) Lee, Jung Hun; Fetters, Lewis. J Archer, Lynden Adel F. Halasa Tube Dynamics in Binary Blend Macromolecules (2005) 38(9) 3917-3932

(3.) Adel F. Halasa, Jim Prentis, and Bill Hsu, Chad Jasiunas: High vinyl high styrene solution SBR Polymer. Polymer 46 (2005) 4166-4174

(4.) Adel F. Halasa, William P. Francis: Viscoelastic Properties of 1,2-, 1,4-diblock Polymer 46 (2005) 4152-4159

(5) Adel F. Halasa, Bill Hsu Synthesis of high vinyl elastomers via mixed organolithium and sodium alkoxide in the presence of polar modifier. Polymer 43 (2005) 7111-7118

(6.) Zhu. Zhiyong Thompson Thaddeus Wang Shi-Quing Von Meerwall Ernst d. Adel F. Halasa Investigating Linear and nonlinear Viscoelastic using model Silica filled Particle-Filled polybutadiene, Macromolecules (2005) 38 (21) 8816-8824

Pokorny Amanda Waldow Dean, Adel F. Halasa, Phase separations behavior of a polymer blend modified by triblock and graft copolymer additive. Abstract of Papers 227th ACS National Meeting Anaheim CA March 28-April (2004)

Vogel Gretchen Fossler Kari Waldow Dean Briber, Robert Adel F. Halasa, Effect of random and block copolymer additive on homopolymer studied by small angle neutron scattering J. Polymer Sci, Part B Polymer Physics (2004) 442(17) 3191-3203

Landwehr Valerie Waldow Dean, Adel F Halasa Effect of copolymer architecture on polymer blend; a microscopy study. Abstract of Papers 227th ACS National Meeting Anaheim CA 28th- April (2004)

Adel F. Halasa Diene Polymerization with Mixed alkyl Lithium and metal alkoxide catalyst in the presence of polar modifiers Abstract of Papers 221st ACS National Meeting San Diego CA April; 1-5 (2001)

Yang Xiaoping Adel F Halasa Wang Shi-Quing Hsu Wen-Liang A solution rheology approach to component dynamics in A/B Miscible Blend.2. Fraction Coefficients of polymers a and B Macromolecules (2001) 34(24) 8532-8540

Adel F. Halasa New Elastomers for Tire Applications Book of Abstract 219th ACS National Meeting San Francisco March 26-30 (2000)

Liu Weixia Saito Takeshi Li Lan Rinaldi Peter L Hirst Robert Adel F Halasa Visintainer James Characterization of Sn- Containing polymer Chain of Polybutadiene using ¹H/¹¹⁹Sn Triple-resonance 3D-NMR Macromolecules (200) 33(2364-2369)

Yang Xiaoping, Wang Shi-Quing Adel F. Halasa Fast flow behavior of highly entangled monodispersed polymers Part I Interfacial stick-slip transition of polybutadiene melts Rheological Acta 1(1998) 37 (5) 415-423

Yang, Xiaoping Wang, Shi-Quing H. Ishida. Fast flow behavior of highly entangled monodispersed polymers Part II Barrel correction hysteresis and self-oscillation in capillary flow of butadiene Rheologica Acta (1998) 37 (5) 424-429

Adel F. Halasa, Hsu, Wen-liang Steven K Henning Lettieri Susan Anionic Polymerization Past, Present & Future Polymeric Material science and Engineering (1999) 80 279-280

Adel F. Halasa, Hsu Bill Henning Steven Lattieri Susan Anionic Polymerization Part II Past Present and Future Book of Abstract 217th ASC. National Meeting Anaheim CA March 21-25 (1999)

Adel F. Halasa, Bill Hsu, Preparation and Characterization of crystalline 3,4-polyisoprene Rubber chemistry and technology Vol. 67, No.5, Nov.- Dec. 1994.

Dean Waldow Bethany Barham Kari Fossier Gretchen Voge , Adel F. Halasa Phase separation Kinetics of a polymer blend modified by random and blocks copolymer additive. Macromolecules (2001) , 34 514-521

Wang Shanfeng Van Meerwall Erenst D, wang Shi-Qing Adel F. Halasa, Hsu w-l Zhou Jinping J.P Quirk Diffusion and rheology of Binary Mixture Macromolecules (2004) 37 (4) 1641-1651

Wang Shanfeng Wang Shi-Qing , Adel F. Halasa , Hsu W-L Relation Dynamics in Mixture of long and short chain tube dilation and impeded curvilinear diffusion Macromolecules (2003) 36 (14) 5355-5371

Plucktaevesk N Wang, Shi-Qing Adel. F. Halasa, Interfacial flow behaviour of highly entangled polybutadiene solution Macromolecules (1999) 32 (9) 3045-3050

Jean H. S Nakahama A.I. Hsu, Bill, Adel. F. Halasa, Phase inversion in viscoelastic Polybutadiene (PB)/Polyisoprene (PI) blend book of abstract 217th ACS National Meeting California March 21-25 (1999).

Drzel P.L Adel F. Halasa Kofinas P. Polymer (2000) 41(12) 4671-4677

Srithawatpong R. Peng Olson Z.L. Jamieson A.M. Simha R. McGervey J.D. Maier T.R. Adel F. Halasa Positron annihilation lifetime studies of changes in free volume on cross-linking cis-polyisoprene high vinyl polybutadiene and their miscible blend J. Poly. Science Part B Polymer Physics (1999) 37(19) 2754-2770
Olson B.G. Srithawatpong R. Peng McGervey Z.L. Ishide H. Maier T.M Adel F. Halasa, Composition dependence of Tg in high vinylpolybutadiene/cis-polyisoprene blend studies by means of positron annihilation lifetime spectroscopy J.of Phsics condensed Matter (1998) 10 (46) 10451-10459

Peng Z.L. Olson B.G. Srithawatpong R. McGevert J.D Jamieson A.M. Isheda H. Maier T.M. Adel F. Halasa Study of free Volume in high vinyl polbutadiene/cis polyisoprnre using positron annihilation Spectroscopy erratum to document cited in C.A 128 180891 J. Polymer physics (1998) 1 36 (10) 1793.

Adel F. Halasa, Preparation and characterization of solution SIBR (Styrene-isoprene-butadiene) terpolymer via anionic polymerization Rubber Chemistry and technology (1997) 70(3) 295-308

Adel F. Halasa, Hsu W.L. 3,4-Polyisoprene, Crystalline Polymer Materials Encyclopedia 6337-6340 Volume 8 (1996).

Chang C. C. Adel F. Halasa, Miller J.W.Jr. The reaction Engineering of the Anionic Polymerization of Isoprene J. Polymer Science 47 1589-1599 (1993).

Massie J.M. Hirst R.C. Adel F. Halasa Rubber Chemistry & Technology 66 No.2 May-June 1993

Chang C.C Adel F Halasa Miller J. W. Jr. Bill Hsu Polymer International 33 151-159 (1994)

Adel F. Halasa , Massie J.M. Elastomers synthetic Polybutadiene Kirk-Othmer Encyclopedia of Chemical Technology-Fourth Ed. Volumn No. 8

Patterson Dennis B. Adel F Halasa , Novel Potassium-Based Generated from alkylmagnesium compounds for the preparation of highly crystalline trans-1,4-Polybutadiene Macromolecules 24 15831589 (1991)

Halasa Publications and Patents

Anionic polymerization initiators containing protected functional groups and functionally terminated diene of polymers. Schulz, D. N.; Halasa, A. F.; Oberster, A. E. Cent. Res. Lab., Firestone Tire and Rubber Co., Akron, OH,

USA. Journal of Polymer Science, Polymer Chemistry Edition (1974), 12(1), 153-66. CODEN: JPLCAT ISSN: 0449-296X. Journal written in English. CAN 81:37894 AN 1974:437894 CAPLUS

Anionic polymerization initiators containing protected functional groups and functionally terminated diene polymers. Schulz, D. N.; Halasa, A. F.; Oberster, A. E. Cent. Res. Lab., Firestone Tire and Rubber Co., Akron, OH, USA. Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1973), 14(2), 1215-19. CODEN: ACPAY ISSN:

Anionic polymerization initiators containing protected functional groups. II. Schulz, D. N.; Halasa, A. F.. Cent. Res. Lab., Firestone Tire and Rubber Co., Akron, OH, USA. Journal of Polymer Science, Polymer Chemistry Edition (1977), 15(10), 2401-10. CODEN: JPLCAT ISSN: 0449-296X. Journal written in English. CAN 87:185787 AN 1977:585787 CAPLUS

Anionically prepared crystalline-amorphous-diblock. Halasa, A. F.; Vescelius, L. E.; Futamura, S. S.; Hall, J. E. Cent. Res. Lab., Firestone Tire and Rubber Co., Akron, OH, USA. Proc. IUPAC, I. U. P. A. C., Macromol. Symp., 28th (1982), 541. Publisher: Int. Union Pure Appl. Chem., Oxford, UK CODEN: 50DXAF Conference written in English. CAN 99:123874

Carbon black distribution in NR/polybutadiene blends. Massie, J. M.; Hirst, R. C.; Halasa, A. F.. Res. Div., Goodyear Tire and Rubber Co., Akron, OH, USA. Rubber Chemistry and Technology (1993), 66(2), 276-85. CODEN: RCTEA4 ISSN: 0035-9475. Journal written in English. CAN 120:272808 AN 1994:272808 CAPLUS

Carbon-13 NMR study of the propagating live end in the n-butyllithium polymerization of 1,3-butadiene. Halasa, A. F.; Mochel, V. D.; Fraenkel, G. Cent. Res. Lab., Firestone Tire Rubber Co., Akron, OH, USA. Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1980), 21(1), 19-20. CODEN: ACPAY ISSN: 0032-3934. Journal written in English. CAN 95:187765 AN 1981:587765 CAPLUS

Composition dependence of T_g in high-vinyl polybutadiene/cis-polyisoprene blends studied by means of positron annihilation lifetime spectroscopy. Olson, B. G.; Srithawatpong, R.; Peng, Z. L.; McGervey, J. D.; Ishida, H.; Maier, T. M.; Halasa, A. F.. Department of Physics, Case Western Reserve University,

Cleveland, OH, USA. Journal of Physics: Condensed Matter (1998), 10(46), 10451-10459. Publisher: Institute of Physics Publishing, CODEN: JCOMEL ISSN: 0953-8984. Journal written in English. CAN 130:125654

Effect of alkoxides on chain termination and chain transfer of sodium-catalyzed polybutadiene. Cheng, Tai Chun; Halasa, A. F.; Tate, D. P. Cent. Res. Lab., Firestone Tire and Rubber Co., Akron, OH, USA. Journal of Polymer Science, Polymer Chemistry Edition (1971), 9(9), 2493-502. CODEN: JPLCAT ISSN: 0449-296X. Journal written in English. CAN

Evaluation of domain spacing scaling laws for semicrystalline diblock copolymers. Douzinas, K. C.; Cohen, R. E.; Halasa, A. F.. Dep. Chem. Eng., Massachusetts Inst. Technol., Cambridge, MA, USA. Avail. NTIS. Report (1991), (TR-1; Order No. AD-A231 958), 21 pp. From: Gov. Rep. Announce. Index (U. S.) 1991, 91(14), Abstr. No. 136,602. Report written in English. CAN 116:195198 AN 1992:195198 CAPLUS

High vinyl elastomers via mixed organolithium and alkali metal alkoxide catalyst. Hsu, W. L.; Halasa, A. F.. Chemical R+D, The Goodyear Tire & Rubber Co., Akron, OH, USA. Rubber Expo 2001, Fall Technical Program, 160th, Cleveland, OH, United States, Oct. 16-20, 2001 (2001), 1097-1114. Publisher: American Chemical Society, Rubber Division, Akron, Ohio CODEN: 69EGPM Conference; Computer Optical Disk written in English. CAN 140:236890 AN 2003:668619 CAPLUS

Jojoba oil. Halasa, A. F.; Youssef, A. K.; Omar, S. A. Kuwait Inst. Sci. Res., Kuwait, Kuwait. Annual Research Report - Kuwait Institute for Scientific Research (1980), 239-40. CODEN: ARKRDL ISSN: 0250-4065. Journal; General Review written in English. CAN 97:88625 AN 1982:488625 CAPLUS

Metalation of unsaturated polymers by using activated organolithium compounds and the formation of graft copolymers. II. Halasa, A. F.; Mitchell, G. B.; Stayer, M.; Tate, D. P.; Oberster, A. E.; Koch, R. W. Cent. Res. Lab., Firestone Tire and Rubber Co., Akron, OH, USA. Journal of Polymer Science, Polymer Chemistry Edition (1976), 14(2), 497-506. CODEN: JPLCAT ISSN: 0449-296X. Journal written in English. CAN 84:151818 AN 1976:151818 CAPLUS

Microstructure of polybutadiene catalyzed by alkali metal tert-butoxides and butylsodium. II. Cheng, Tai Chun; Halasa, A. F.; Tate, D. P. Cent. Res. Lab., Firestone Tire and Rubber Co., Akron, OH, USA. Journal of Polymer Science, Polymer Chemistry Edition (1973), 11(1), 253-9. CODEN: JPLCAT ISSN: 0449-296X. Journal written in English. CAN 78:111825 AN 1973:111825 CAPLUS

Microstructure orientation and nanoporous gas transport in semicrystalline block copolymer membranes. Drzal, P. L.; Halasa, A. F.; Kofinas, P. Department of Materials and Nuclear Engineering, University of Maryland, College Park, MD, USA. Polymer (2000), 41(12), 4671-4677. Publisher: Elsevier Science Ltd., CODEN: POLMAG ISSN: 0032-3861. Journal written in English. CAN 132:348627 AN 2000:232254 CAPLUS

Miscibility and phase behavior of IR/BR and BR/BR blends. Massie, J. M.; Halasa, A. F.; Thudium, R. N.; Burkhart, C. W.; Hsu, W. L.; He, J.; Zoller, P.; Ritchey, W. M. Goodyear Tire and Rubber Co., USA. Rubber World (1992), 207(3), 15-18, 31. CODEN: RUBWAQ ISSN: 0035-9572. Journal written in English. CAN 119:10261 AN 1993:410261 CAPLUS

Miscibility and phase behavior of polyisoprene/polybutadiene and polybutadiene/polybutadiene blends. Massie, J. M.; Halasa, A. F.; Thudium, R. N.; Burkhart, C. W. Goodyear Tire and Rubber Co., Akron, OH, USA. Annual Technical Conference - Society of Plastics Engineers (1992), 50th(Vol. 1), 1043-7. CODEN: ACPED4 ISSN: 0272-5223. Journal written in English. CAN 120:300889 AN 1994:300889 CAPLUS

Modeling studies of the controlled anionic copolymerization of butadiene and styrene. Chang, C. C.; Halasa, A. F.; Miller, J. W., Jr.; Hsu, W. L. Corp. Res. Div., Goodyear Tire and Rubber Co., Akron, OH, USA. Polymer International (1994), 33(2), 151-9. CODEN: PLYIEI ISSN: 0959-8103. Journal written in English. CAN 120:220077 AN 1994:220077 CAPLUS

New ether modifiers for anionic polymerization of isoprene. Halasa, A. F.; Hsu, W. L. Corporate Research, Goodyear Tire and Rubber Co, Akron, OH, USA. Book of Abstracts, 212th ACS National Meeting, Orlando, FL, August 25-29 (1996), POLY-317. Publisher: American Chemical Society, Washington, D. C CODEN: 63BFAF Conference; Meeting Abstract written in English. AN 1996:416084 CAPLUS

New ether modifiers for anionic polymerization of isoprene. Halasa, A. F.; Hsu, W. L. Goodyear Tire & Rubber Co., Akron, OH, USA. Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1996), 37(2), 676-677. Publisher: American Chemical Society, Division of Polymer Chemistry, CODEN: ACPPAY ISSN: 0032-3934. Journal written in English. CAN 125:222549 AN 1996:562486 CAPLUS

Novel ether modifiers for anionic polymerization of isoprene. Hsu, W. L.; Halasa, A. F.; Wetli, T. T. The Goodyear Tire and Rubber Co., Akron, OH, USA. Rubber Chemistry and Technology (1998), 71(1), 62-69. Publisher: American Chemical Society, Rubber Division, CODEN: RCTEA4 ISSN: 0035-9475. Journal written in English. CAN 129:16957 AN 1998:330889 CAPLUS

Organolithium catalysis of olefin and diene polymerization. Halasa, A. F.; Schulz, D. N.; Tate, D. P.; Mochel, V. D. Cent. Res. Lab., Firestone Tire and Rubber Co., Akron, OH, USA. Advances in Organometallic Chemistry (1980), 18 55-97. CODEN: AOMCAU ISSN: 0065-3055. Journal; General Review written in English. CAN 94:47769 AN 1981:47769 CAPLUS

Phase inversion in viscoelastic polybutadiene (PB)/polyisoprene (PI) blends. Jeon, H. S.; Nakatani, A. I.; Hsu, W.; Halasa, A. F.; Han, C. C. Polymers Division, National Institute of Standards and Technology, Gaithersburg, MD, USA. Polymeric Materials Science and Engineering (1999), 80 349-350. Publisher: American Chemical Society, CODEN: PMSEDG ISSN: 0743-0515. Journal written in English. CAN 130:352894 AN 1999:213753 CAPLUS

Photoacoustic study of silica-silane coupling reagent interactions. Abu-Zeid, M. E.; Mahmoud, G. S.; Anani, A. A.; Halasa, A. F.; Mobasher, A. A. Phys. Dep., Kuwait Univ., Kuwait, Kuwait. Journal of Photochemistry (1981), 16(4), 279-88. CODEN: JPCMAE ISSN: 0047-2670. Journal written in English. CAN 95:178139 AN 1981:578139 CAPLUS

Polymerization of butadiene with lithium morpholinide initiators. Cheng, Tai Chun; Oberster, A. E.; Halasa, A. F.. Cent. Res. Lab., Firestone Tire and Rubber Co., Akron, OH, USA. Journal of Polymer Science, Polymer Chemistry Edition (1979), 17(6), 1847-8. CODEN: JPLCAT ISSN: 0449-296X. Journal written in English. CAN 91:21244 AN 1979:421244 CAPLUS

Positron annihilation lifetime studies of changes in free volume on cross-linking cis-polyisoprene, high-vinyl polybutadiene, and their miscible blends. Srithawatpong, R.; Peng, Z. L.; Olson, B. G.; Jamieson, A. M.; Simha, R.; Mcgervey, J. D.; Maier, T. R.; Halasa, A. F.; Ishida, H. Department of Macromolecular Science, Case Western Reserve University, Cleveland, OH, USA. *Journal of Polymer Science, Part B: Polymer Physics* (1999), 37(19), 2754-2770. Publisher: John Wiley & Sons, Inc., CODEN: JPBPEM ISSN: 0887-6266. Journal written in English. CAN 131:338187 AN 1999:625765 CAPLUS

Preparation and characterization of a perfectly random solution SBR using modified organolithium catalyst. Halasa, A. F.; Hsu, W. L. Goodyear Tire & Rubber Co., Akron, OH, USA. *Polymer Preprints (American Chemical Society, Division of Polymer Chemistry)* (1996), 37(2), 708-709. Publisher: American Chemical Society, Division of Polymer Chemistry, CODEN: ACPPAY ISSN: 0032-3934. Journal written in English. CAN 125:196493 AN 1996:562502 CAPLUS

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Preparation and characterization of crystalline 3,4-polyisoprene. Hsu, W. L.; Halasa, A. F.. Corporate Res., The Goodyear Tire & Rubber Co., Akron, OH, USA. *Rubber Chemistry and Technology* (1994), 67(5), 865-70. Publisher: American Chemical Society, Rubber Division, CODEN: RCTEA4 ISSN: 0035-9475. Journal written in English. CAN 122:163157 AN 1995:372664 CAPLUS

Properties of some diblock copolymers based on 1,3-butadiene monomer. Cohen, R. E.; Torradas, J. M.; Wilfong, D. E.; Halasa, A. F.. Dep. Chem. Eng., Massachusetts Inst. Technol., Cambridge, MA, USA. *Polymer Preprints (American Chemical Society, Division of Polymer Chemistry)* (1980), 21(2), 216-17. CODEN: ACPPAY ISSN: 0032-3934. Journal written in English. CAN 96:218541 AN 1982:218541 CAPLUS

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$^1\text{H}/^{13}\text{C}/^{119}\text{Sn}$ triple-resonance 3-D NMR of tin-containing polybutadiene. Liu, Weixia; Rinaldi, Peter L.; Halasa, Adel; Visintainer, James; Hirst, Robert. Department of Chemistry, University of Akron, Akron, OH, USA. Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000 (2000), POLY-060. Publisher: American Chemical Society, Washington, D. C. CODEN: 69CLAC Conference; Meeting Abstract written in English. AN 2000:334193 CAPLUS

A Solution Rheology Approach to Component Dynamics in A/B Miscible Blends. 2. Friction Coefficients of Polymers A and B. Yang, Xiaoping; Halasa, Adel; Hsu, Wen-Liang; Wang, Shi-Qing. Department of Macromolecular Science and Engineering, Case Western Reserve University, Cleveland, OH, USA. Macromolecules (2001), 34(24), 8532-8540. Publisher: American Chemical Society, CODEN: MAMOBX ISSN: 0024-9297. Journal written in English. CAN 136:54361 AN 2001:759723 CAPLUS

Abstracts

Effect of random and block copolymer additives on a homopolymer blend studied by small-angle neutron scattering. Voge, Gretchen; Fosser, Kari; Waldow, Dean; Briber, Robert; Halasa, Adel. Department of Chemistry, Pacific Lutheran University, Tacoma, WA, USA. *Journal of Polymer Science, Part B: Polymer Physics* (2004), 42(17), 3191-3203. Publisher: John Wiley & Sons, Inc., CODEN: JPBPEM ISSN: 0887-6266. Journal written in English. CAN 141:366734 AN 2004:717385 CAPLUS

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Synergistic Activities

Chairmen of the Gordon Research Elastomer and Gels 1997.

Chairmen of the Akron section ACS in 1979

Chairmen of the Organic topical groups Akron Section ACS 1977

Co-author on Science and technology of Rubber Third Edition 2005

The Chemical Modification of Polymers.

Goodyear Cooperate Inventor two years 2003, 2004,
Invited speaker at several Academic universities Purdue University 2004,
University of Akron Polymer Institute 2006, Three invited guest speaker at the
University of Akron Polymer engineering 2001, 2002, 2003. Seminar speaker at
Case-Western Reserve 2000
Guest speaker at the University of Cincinnati 2001
Guest speaker at MIT 1999
Guest speaker at Tokyo University Tokyo and Kyoto Japan 1999
Guest speaker at the University of Minnesota
Plenary speaker at the German Rubber Conference 2006 July 3d
Presented several talks at International meeting IUPAC International Rubber
Conference Chennai India and Bangkok Thailand, International Rubber Conference
Yokohama Japan