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Curriculum Vitae
Jeffrey T. Gotro, Ph.D.

Dr. Gotro provides consulting and expert witness services exclusively in the field of polymers (or plastics) including polymer materials selection, polymer mechanical properties, polymer physics and rheology, structure-property-process-performance relationships, polymer characterization, and polymer processing. Dr. Gotro has been practicing in the field of polymer science for over 35 years and has authored or co-authored 61 technical papers and 5 book chapters including a chapter on *Thermosets* in the Encyclopedia of Polymer Science. Dr. Gotro holds 15 issued US patents and has 4 patent applications pending in the United States Patent and Trademark Office.

Education:

Ph.D. in Materials Science with specialty in polymer science; Northwestern University, Evanston, IL (1983)

B.S. in Mechanical Engineering and Materials Science; Marquette University, Milwaukee, WI (1977)

Litigation Support Experience:

- Twenty one cases involving product liability, where a polymer product failed in use, deposition and court testimony (16 cases completed, 4 cases ongoing)
- Fifteen cases involving Intellectual Property; patent infringement, *inter partes* review (2 IPR's), ITC (one case), deposition and court testimony (14 cases completed,1 case ongoing)

Areas of Expertise:

- Epoxy pipe linings; IP litigation and product liability
- Floor coatings; formulation (epoxy and acrylic), applications, and product liability
- Thermoplastic lamination; polymer material selection, processing, and patent infringement
- Thermoplastic skylights; polymer material selection, UV exposure, and polymer characterization, material compatibility, product liability
- Thermoplastic polymers in artificial field turf; polymer material selection, UV degradation, and polymer characterization
- Construction defect; polymeric sealants and window flashing

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- Polymers used in electronic applications such as adhesives, coatings, laminates, underfills, polymer composites
- Thermosetting polymers: epoxy, acrylics, polyimides, bismaleimides, cyanate esters
- Polymer characterization: thermal analysis, mechanical property determination, rheology and flow of polymers/plastics
- Process evaluations (mixing, dispensing, coating, lamination, molding)

Honors and Awards

John A. Wagnon, Jr. Technical Achievement Award (2014), International Microelectronics and Packaging Society (IMAPS) awarded in recognition for numerous and sustained technical contributions in the area of polymers used in the Microelectronics and Electronics Packaging industries.

Fellow of the Society, International Microelectronics and Packaging Society (IMAPS), 2014 Elected Fellow in recognition of his years of dedication and support of IMAPS in multiple leadership roles and for his numerous technical contributions to the Society.

National Starch and Chemical Company, CEO Award (2004) presented to the highest performing Strategic Business Unit in the National Starch and Chemical Company. The award was presented to the leadership team of Ablestik Laboratories in recognition for performance excellence in safety, innovation (growth in new products), financial delivery (sales and profitability), and community involvement.

National Starch and Chemical Company, Corky Caldwell Innovation Award for the development of a market-changing new printable paste die attach adhesive achieving greater than $40 million in sales within three years after commercialization.

Honeywell Technical Achievement Award for leading the development of UltraStable BondPly a material and process used to fabricate multilayer flip-chip packaging substrates

AlliedSignal Management Award for leading the development of FR406BC, an enhanced buried capacitance laminate for multilayer printed circuit boards.

IBM Outstanding Technical Achievement Award for "Development of Lamination Process Fundamentals"

Three **IBM Invention Achievement Awards**

IBM Technical Excellence Award for eliminating defects in the printed circuit board manufacturing process resulting in two-year savings of $10 million

Seventeen **IBM Publication Achievement Awards** for technical papers published in scientific journals and conference proceedings

Pi Tau Sigma, Honorary Mechanical Engineering Fraternity, inducted in 1977
Dean's Award, Outstanding Senior in Materials Science, Marquette University

Sigma Xi, The Scientific Research Society, inducted in 1989

Society of Plastics Engineers Distinguished Service Award for contributions as Chairman of the Polymer Analysis Division from 1990-1992

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Professional Technical Society Memberships

Forensic Expert Witness Association (FEWA) 2009-present
American Chemical Society (ACS) 1981- present
International Microelectronics Assembly and Packaging Society (IMAPS) lifetime member
Society of Plastics Engineers (SPE) 1988-1999 and 2010 – present
Society for the Advancement of Material and Process Engineering (SAMPE) 2013-present
Institute of Management Consultants (IMC) 2008 – present
Institute of Electrical and Electronic Engineers (IEEE), Electronics Packaging Society, 2017 - present

Patents

1) 5,523,148; Multilayer article comprising a toughened polycyanurate with embedded electrically conductive patterns
2) 5,527,592; Multilayer article having a planarized outer layer comprising a toughened polycyanurate
3) 5,527,593; Structures fabricated from toughened polycyanurate
4) 5,527,838; Toughened polycyanurate resins containing particulates
5) 5,529,836; Multilayer article comprising a toughened polycyanurate
6) 5,548,034; Modified dicyanate ester resin having enhanced fracture toughness
7) 5,562,727; Intraluminal stent and method of insertion thereof
8) 5,599,611; Prepreg and cured laminate fabricated from a toughened polycyanurate
9) 5,827,907; Homo-, co-, or multicomponent thermoplastic polymer dispersed in a thermoset resin
10) 5,834,537; Homo-, co-, or multicomponent thermoplastic polymer dispersed in a thermoset resin
11) 6,225,373; Homo-, co-, or multicomponent thermoplastic polymer dispersed in a thermoset resin
12) 6,242,078; High Density printed circuit substrate and method of fabrication
13) 6,255,039; Fabrication of high-density multilayer interconnect printed circuit boards
14) 8,432036; Lead frames with improved adhesion to plastic encapsulants
15) 9,120,614; Method for preserving the firmness and internal pressure of a resin cartridge and improving the shelf-life of a resin cartridge

4 patent applications currently filed and pending in the United States Patent and Trademark Office. 9 Inventions published in the IBM Technical Disclosure Bulletin.

Professional Summary

InnoCentrix, LLC, Rancho Santa Margarita, CA 2008 - present
President and Founder

Management and technical consulting firm specializing in polymers and innovation. Provide consulting services to enable clients to increase the financial impact of their existing or new polymer technologies. Our team has a strong combination of deep polymer expertise combined with a solid focus on delivering value to our clients. Provide Intellectual Property Management process to ensure client's key IP assets are leveraged for business impact. InnoCentrix also has expertise in solving complex polymer-related product and process problems. Provide litigation support and expert witness services in the area of polymers and plastics.

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Ablestik Laboratories, Rancho Dominguez, CA **2005-2008**
Vice President, Technology

Ablestik Laboratories (Now Henkel Electronic Materials) is the global market leader providing advanced adhesives, coatings, underfills, and specialty polymer materials for electronic applications. Led a 100 person R&D staff and 29 applications engineers responsible for global product development and engineering. Developed expertise in adhesives, underfills, coatings, and encapsulants. Established R&D Laboratory in Shanghai, China to be close to customer-base and commercialized three new products in the first year. Commercialized over 30 new products over a two year timeframe, leading to approximately $2 million revenues in the first year.

Director, Research and Development ***2003-2005***

Responsible for long term research and product development for polymeric materials used in semiconductor packaging (adhesives, underfills, coatings, and encapsulants). Reported to VP of R&D and managed a group of 25 scientists, engineers and technicians. Worked collaboratively with marketing to design and establish a comprehensive intellectual property process to manage/disposition inventions, resulting in 65% of products covered by patents. Improved technology delivery by focusing applied research on developing customer-targeted product science platforms, enhancing the formulation toolbox, enabling the development of new, differentiated products.

The Gotro Group, Trabuco Canyon, CA **2001-2002**
President

Founded consulting practice to help advanced polymer companies achieve a competitive advantage through new product development, customer-focused application of new material technology, technical problem solving, and intellectual property strategy development. Provided expert witness analysis and deposition regarding a product liability case, identified failure mechanism in polymeric materials, and provided technical guidance to plaintiff attorney.

Honeywell Electronic Materials, Costa Mesa, CA **1998 - 2001**

Director of Technology

Responsible for product development engineering, materials technology, technical marketing and pilot line operations support. Reported to VP/GM and led a team of 20 scientists, engineers and technicians developing a high-density multilayer ball grid array (MLBGA) substrate. Served as the technology integration team leader after the acquisition of Johnson Matthey Electronics by AlliedSignal Electronic Materials. Developed intellectual property strategy to build a patent thicket around newly developed polymer and process technology. Continued to develop expertise in laminate technologies (thermosetting polymer composites) for electronic packaging.

AlliedSignal Laminate Systems, La Crosse, WI **1995 to 1998**
Product Technology Skill Center Leader

Led the research, development and commercialization of new products for a $400 million business unit. Reported to VP of Technology. Managed 12 direct reports consisting of Ph.D. scientists, product development engineers and lab technicians. Was active in the Strategic

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Planning process, Annual Operating Plan, and Management Resource Review (employee appraisal and career development) process.

Aeroquip Corporate Technology Laboratory, Ann Arbor, MI **1994 to 1995**
Consulting Scientist

Conducted research and product development for a provider of high technology fluid control equipment, acquiring skills stage/gate new product development processes and new business development. Developed prototypes, optimized design, and scaled-up manufacturing for a pharmaceutical high-purity transfer device and reduced the development time by two-thirds utilizing designed experiments (DOE's).

IBM Inc., Materials Engineering Laboratory, Endicott, NY **1982 to 1993**
Advisory Scientist

Conducted scientific research in rheology, curing, formulating, and processing of thermosetting polymers used in leading edge electronic packaging applications. Developed significant expertise in advanced polymer characterization and processing of epoxy, cyanate ester, polyimide, and other high-performance polymers. Co-invented a new class of toughened cyanate resins resulting in nine patents issued covering composition of matter and applications.

Professional Affiliations

Adjunct Professor, Syracuse University, Department of Chemical Engineering and Materials Science, 1986-1993

Instructor, California State University at Fullerton, Six Sigma Green Belt and Black Belt courses, 2001-2006

Adjunct Professor, Concordia University, Irvine CA, taught course in MBA program on New Product Innovation, 2008-2011

Instructor, Professional Development Courses

1) International Wafer Level Packaging Conference (IWLPC), 2018 - 2019
    - Professional Development Course “Polymers in Wafer Level Packaging”
2) International Microelectronics Assembly and Packaging Society (IMAPS)
    - From 2010 to 2022 taught 18 Professional Development Courses related to polymers used in electronics at the Device Packaging Conference and the IMAPS National Conference
3) Electronic Components and Technology Conference (ECTC)
    - Professional Development Course “Polymers in Electronic Packaging” presented annually from 2012 -2022
4) North American Thermal Analysis Society (NATAS), August 2012
    - Professional Development Course on “Rheology as a Thermal Analysis Technique”
5) Golden Gate Polymer Forum, Short courses on Thermosets
    - “Thermoset and UV Polymers: Chemistry, Characterization and Cure in 2012
    - “Thermosets Used in Electronic Packaging in 2019

Not Retained

Publications

Book Chapters

1) **"Polymers and Polymer-Based Composites for Electronic Applications,"** with G. Schmitt and B. Appelt, in Principles of Electronic Packaging, McGraw Hill Book Company, New York, New York, (1989)
2) **"Correlation of Glass Transition Temperature, Conversion, and Viscosity During Epoxy Resin Curing**", with B. Fuller and G. Martin, *Advances in Chemistry Series, #227*, Polymer Characterization: Physical Property, Spectroscopic, and Chromatographic Methods, p. 215, American Chemical Society, Washington DC (1990).
3) **"Modeling the Rheological and Dielectric Properties During Thermoset Cure,"** with A. Tungare and G. Martin, *Advances in Chemistry Series, #227*, Polymer Characterization: Physical Property, Spectroscopic, and Chromatographic Methods, p. 235, American Chemical Society, Washington DC (1990).
4) **"Thermosets"** in *Encyclopedia of Polymer Science & Technology,* with R. B. Prime, (2017) John Wiley & Sons, NY.
5) **"Characterization of Thermosetting Resins and Polymers"** in ASM Handbook, Volume 11B, with R. B. Prime, (2022). https://doi.org/10.31399/asm.hb.v11B.a0006924

New Markets/Applications

1) **"An Improved Laminate for Embedded Capacitance Applications,"** with J. Kamla, Anh-Vu Le, M. Dhillon, J. Howard, and J. Young, *Proceedings of the IPC Technical Conference,* p. S04-3-1, March (1999)
2) **"Advanced Laminates for High Density Interconnect Substrates,"** with G. Smith, N. Androff, B. Bedwell, E. Craddock, and R. Clancy, *Proceedings of SEMICON WEST,* July 1999.

New or Improved Materials

1) **"High Performance Polycyanurate Thermosets,"** with J. C. Hedrick and A. Viehbeck, *Proceedings of the American Chemical Society, Polymer Chemistry Division, Polymer Preprints*, v. 35(1) p. 537 (1994).
2) **"Toughened Polycyanurate Thermosets Possessing Tailorable Glass Transitions,"** with J. C. Hedrick and A. Viehbeck, *Proceedings of the American Chemical Society, Polymer Materials; Science and Engineering*, v. 7(2), p. 746 (1994).
3) **"A New Multifunctional High Performance Epoxy Resin for MCM-L Applications,"** with R. Japp and T. Lewis, *Proceedings of the Fall IPC Meeting*, October 24-28 (1993).
4) **"Thermoplastic Toughened Cyanate Ester Resins: An Interesting Low Dielectric Constant Thermosetting Polymer,"** with J. C. Hedrick, *Proceedings of the Fall IPC Meeting*, October 24-28 (1993).
5) **"Characterization of a Bis-Maleimide Triazine Resin for Multilayer Circuit Boards,"** with B. Appelt, *IBM Journal of Research and Development*, v. 31, p. 616 (1988).
6) **"Thermosets Hard at Work in Your Smart Phone,"** J. T. Gotro, published in the proceedings of the 2021 Thermoset Resin Formulators Association annual technical meeting on September 30, 2021
7) **"Beyond Epoxy: High Performance Thermosets,"** J. T. Gotro, published in the proceedings of the 2022 Thermoset Resin Formulators Association annual technical meeting held in Dallas, TX May 2-5, 2022

Processing of Advanced Polymers

1) **"Practical Methods to Characterize the Thermoset Cure Process,"** J.T. Gotro, published in the proceedings of the Thermoset Resin Formulators Association annual technical meeting held in Nashville, TN, March 11-14, 2018

Not Retained

2) **"Rheological Characterization of Thermosets: A Practical Approach,"** J. T. Gotro, published in the proceedings of the Thermoset Resin Formulators Association annual technical meeting held in Charleston, SC, April 7-10, 2019
3) **"The Rheological Characterization of Fluorinated Thermoplastics Using Squeezing Flow Viscometry,"** with G. Martin and Y. Deng, *Polymer Engineering and Science*, v. 34, p. 213 (1994).
4) **"Determining the Rheological Flow Window for Thermosetting Polymers,"** with G. Kohut and G. Martin, *Society of Plastics Engineers, Technical Papers*, v. 39, p. 2614 (1993).
5) **"Dielectric Cure Monitoring During Composite Lamination,"** *Proceedings of the North American Thermal Analysis Society, Fall Meeting*, p. 523 (1990).
6) **"Simultaneous Dielectric and Dynamic Mechanical Analysis of Thermosetting Polymers,"** with M. Yandrasits, *Polymer Engineering and Science*, v. 29 p. 278 (1989).
7) **"Viscosity Modeling During Epoxy Resin Curing,"** with G. Schmitt and J. Wiley, *Polymer Engineering and Science*, v. 29, p. 329 (1989).
8) **"Analysis of Flow in Epoxy-Glass Cloth Prepregs,"** with G. Schmitt, J. Wiley, and T. Ellis, *Society of Plastics Engineers, Technical Papers*, v. 35, p. 1106 (1989).
9) **"Predicting the Flow Behavior of Thermosetting Resins During Processing,"** with A. Tungare and G. Martin, *Polymer Engineering and Science*, v. 29, p. 1279 (1989).
10) **"Chemorheological Characterization of Thermoset Cure,"** with A. Tungare and G. Martin, *Polymer Engineering and Science*, v. 28, p. 1071 (1988).
11) **"Modeling the Structure-Property-Processing Relationships of Epoxy Resins During Cure,"** with B. Fuller, G. Martin, and A. Tungare, *Society of Plastics Engineers, Technical Papers*, v. 35, p. 1079 (1989).
12) **"Correlation of Viscosity, Ionic Conductivity, and Glass Transition Temperature During Epoxy Resin Curing,"** with B. Fuller and G. Martin, *Proceedings of the American Chemical Society, Polymeric Materials; Science and Engineering*, v. 59, p. 975 (1988).
13) **"Modeling the Rheological and Dielectric Properties During Thermoset Cure,"** with A. Tungare and G. Martin, *Proceedings of the American Chemical Society, Polymeric Materials; Science and Engineering*, v. 59, p. 980 (1988).
14) **"Residual Stresses and Warpage in Woven Glass/Epoxy Laminates,"** with I. Daniel and I. Zewi, *Experimental Mechanics*, v. 27, p. 44 (1987).
15) **"Viscosity Modeling During Epoxy Resin Cure,"** with G. Schmitt and J. Wiley, *Society of Plastics Engineers, Technical Papers*, v. 33, p. 977 (1987).
16) **"The Influence of Lamination Parameters on Warpage of Woven-Glass/Epoxy Laminates,"** with D. Karalekas and I. M. Daniel, *Society of Plastics Engineers, Technical Papers*, v. 33, p. 339 (1987).
17) **"Thermoanalytical Investigation of Composite Lamination,"** with B. Appelt, T. Ellis, and M. Yandrasits, *Polymer Composites*, v. 8, p. 222 (1987).
18) **"Characterization of Resin Flow in Composites,"** with B. Appelt and T. Ellis, *Society of Plastics Engineers, Technical Papers*, v. 32, p. 371 (1986).
19) **"Composite Lamination - Analysis and Modeling,"** with B. Appelt, T. Ellis, G. Schmitt, and J. Wiley, *Society of Plastics Engineers, Technical Papers*, v. 31, p. 289 (1985).
20) **"Residual Stresses and Warpage in Circuit Board Laminates,"** with I. M. Daniel and I. Zewi, *Proceedings of the 1985 Society for Experimental Mechanics, Conference on Experimental Mechanics*, p. 19 (1985)

Characterization of Advanced Polymers

1) **"Rheological Characterization of Thermosets: A Practical Approach"** J. T. Gotro, published in the proceedings of the Thermoset Resin Formulators Association annual technical meeting held in Charleston, SC, April 7-10, 2019
2) "**Practical Methods to Characterize the Thermoset Cure Process**," J. T. Gotro, published in the proceedings of the Thermoset Resin Formulators Association annual technical meeting held in Nashville, TN, March 11-14, 2018

3) **"Triazine Formation in Cyanate-Based Resin Systems at Room Temperature Conditions,"** with A. Osei-Owusu, and George C. Martin, *Polymer* v. 37, p. 4869, (1996)

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4) **“Gelation in Thermosets Formed by Chain Addition Polymerization,”** with M. Heise and G. Martin, *Polymer Engineering and Science*, v. 29, p. 83 (1990).
5) **“The Effects of Network Structure on the Interfacial Adhesion Between Epoxy Composites and Copper Foil,”** with B. Fuller and G. Martin, *SAMPE Quarterly*, v. 21, p. 29 (1990).
6) **“Thermomechanical Behavior of Multilayer Structures in Microelectronics,”** with I. Daniel and T. Wang, Journal *of Electronic Packaging, Transactions of the ASME*, v. 112, p. 11 (1990).
7) **“Curing Chemistry-Physical Property Relations in Bis-Maleimide Resins,”** with A. Tungare and G. Martin*, Society of Plastics Engineers, Technical Papers*, v. 36, p. 970 (1990).
8) **“Determination of Chemical Cure Shrinkage in Woven-Glass/Epoxy Laminates,”** with I. Daniel, T. Wang, and D. Karalekas*, Journal of Composites Technology and Research*, v. 12, p. 172 (1990).
9) **“Analysis of the Curing Behavior of Cyanate Ester Resin Systems,”** with A. Osei-Owusu and G. Martin, *Polymer Engineering and Science*, v. 31, p. 1604 (1992).
10) **“Room Temperature Reactivity and Structural Build-up in Polycyanurate Networks,”** with A. Osei-Owusu, G. Martin, M. Poliks, and J. Balko, *Proceedings of the American Chemical Society, Polymeric Materials; Science and Engineering*, v. 66 p.449 (1992).
11) **“Analysis of Gel Formation: An Interdisciplinary Approach,”** with M. Heise and G. Martin, *Polymer Engineering and Science*, v. 32, p. 529 (1992).
12) **“Catalysis and Kinetics of Cyclotrimerization of Cyanate Ester Resins,”** with A. Osei-Owusu and G. Martin, *Polymer Engineering and Science*, v. 32 p. 535 (1992).
13) **“Network and Rheological Properties of Cyanate Ester Resin Systems,”** with A. Osei-Owusu, G. Martin, and G. Kohut, *Society of Plastics Engineers, Technical Papers*, v. 38, p. 1162 (1992).
14) **“Thermoviscoelastic Analysis of Residual Stresses and Warpage in Composite Laminates,”** with T. Wang and I. Daniel, *Journal of Composite Materials*, v. 26, p. 883 (1992).
15) **“Characterization of Imidazole-Cured Epoxy/Phenol Resins,”** with M. Heise and G. Martin, *Journal of Applied Polymer Science*, v. 42, p. 1557 (1991).
16) **“The Role of Metal Catalysts on the Physical Properties of Cyanate Ester Resins Systems,”** with A. Osei-Owusu and G. Martin*, Society of Plastics Engineers, Technical Papers*, v. 37, p. 727 (1991).
17) **“The Chemorheology of Epoxy-Imidazole Resin Systems,”** with B. Doshi, G. Martin, and G. Kohut, *Proceedings of the North American Thermal Analysis Society Meeting*, p. 500 (1991).
18) **“Characterization of Bisphenol A-Based Cyanate Ester Resin Systems,”** with A. Osei-Owusu and G. Martin, *Proceedings of the American Chemical Society, Polymeric Materials; Science and Engineering*, v. 65 p. 304 (1991).
19) **“Determination of Chemical Cure Shrinkage in Woven-Glass/Epoxy Laminates,”** with I. Daniel, T. Wang, and D. Karalekas, *Society of Plastics Engineers, Technical Papers*, v. 35, p. 632 (1989).
20) **“The Physical Behavior of Imidazole-Cured Epoxy Resins,”** with M. Heise and G. Martin, *Society of Plastics Engineers, Technical Papers*, v. 35, p. 1070 (1989).
21) **“A Multidisciplinary Approach to the Characterization of Thermosetting Polymers,”** with B. Fuller and G. Martin*, Proceedings of the North American Thermal Analysis Society*, p. 358 (1989).
22) **“Thermal Characterization of a Bis-Maleimide Triazine Resin for Composites,”** with B. Appelt and K. Papathomas, *Polymer Composites*, v. 8, p. 39 (1987).
23) **“The Use of FTIR to Characterize Photosensitive Thermosets,”** with R. Snyder*, J. of Applied Spectroscopy*, v. 41, p. 476 (1987).
24) **“Cure Monitoring Using Dielectric and Dynamic Mechanical Analysis,”** *Society of Plastics Engineers, Technical Papers*, v. 33, p. 1039 (1987).
25) **“A Rheological Analysis of the Cure Behavior of Epoxy Resins,”** with A. Tungare and G. Martin, *Society of Plastics Engineers, Technical Papers*, v. 33, p. 330 (1987).
26) **“Thermal and Rheological Analysis of Epoxy Resin Cure,”** with M. Yandrasits, *Proceedings of the North American Thermal Analysis Society*, p. 309 (1987).
27) **“Evaluation of the Chemorheological Parameters of High Performance Resins,”** with G. Martin and A. Tungare, *Proceedings of the North American Thermal Analysis Society*, p. 418 (1987).
28) **“Dielectric Characterization of a Bis-Maleimide Triazine Resin for Composites,”** *Proceedings of the North American Thermal Analysis Society Conference*, p. 247 (1986).
29) **“Thermal Characterization of a Bis-Maleimide/Bis-Cyanate Epoxy Thermosetting Resin for Composites,”** with B. Appelt and K. Papathomas*, Proceedings of the North American Thermal Analysis Society*, p. 168 (1985).

Not Retained

30) **"Role of Chain Microstructure on the Melt Rheological Properties of an Ethylene-Propylene Copolymer,"** with W. W. Graessley, *Proceedings of the American Chemical Society, Polymer Chemistry Division, Polymer Preprints,* v. 23, p. 38, (1982).
31) **"Model Hydrocarbon Polymers: Rheological Properties of Linear Polyisoprenes and Hydrogenated Polyisoprenes,"** with W. W. Graessley, *Macromolecules*, v. 17, p. 2767, (1984).
32) **"Thermorheological Effects of Long Chain Branching in Entangled Polymer Melts,"** with J. M. Carella and W. W. Graessley, *Macromolecules*, v. 19, p. 659, (1986).

Updated 1/11/2023

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