



**Causey Engineering
LLC**

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Curriculum Vitae

ARMENAG H. DEKMEZIAN, PhD

Mr. Dekmezian is an Associate of Causey Engineering, LLC. Causey Engineering has for over 25 years been providing forensic and investigative engineering services and litigation support, specializing in industrial and construction engineering, operations, safety, patents, and regulations. Mr. Dekmezian is a chemist and has expertise in polyolefin materials science and technology. His experience includes product synthesis, material science, patenting, and application of analytical techniques in the design of primarily polyolefin-based plastics, rubbers, and adhesives.

Education:

American University of Beirut, Lebanon

B.S. in Chemistry, 1973

American University of Beirut, Lebanon

Masters in Chemistry, 1975

University of California at Los Angeles

Ph.D., Chemistry, 1979

Florida State University, Tallahassee

Post-doctoral Research, 1980

Patents:

43 Patents

Work Experience:

Causey Engineering LLC, Austin, TX

2009 to Present

Forensic Expert: Provide Forensic and investigative work related to polyolefin-based plastics, rubbers, and adhesives. Causey Engineering provides engineering analysis, governmental regulation investigation and research, accident reconstruction and litigation support primarily related to oil and gas, refineries, chemical and petrochem plants, central power stations, plastics, metals, electronic manufacturing, food processing, pulp and paper, lumber manufacturing, industrial construction, and warehousing.

Exxon Mobil Chemical Company

1981 - 2009

Breakthrough Advisor, Baytown, TX

2003 - 2009

- Evaluated hundreds of concepts to identify Breakthrough (game-changing) opportunities for the ExxonMobil Chemical Company and Upstream Division.
- Advanced two research projects toward commercialization.
- Initiated nanocomposites project to replace metal parts.

Section manager/senior technical professional, Baytown, TX

1993 - 2003

- Led / managed exploration of new catalyst/process for the design of new polyolefins (long chain branched and block copolymers).
- Led effort to develop new high melt strength polypropylene for eight applications.
- Researched new concepts to make metallocene-based polyolefin adhesives and elastic compositions.

Supervisor, Polymer Characterization Laboratory and Research, Linden, N.J.

1985 - 1993

- Led group of chemists and engineers to develop elastic and elastomeric compositions.
- Developed new polymer characterization techniques, including a new solvent-elimination interface for GPC-FTIR hyphenated system.

Technical Rresearch Associate, Baytown, TX

1981 - 1985

- Set up an analytical and characterization laboratory.
- Responsible for Spectroscopy and chromatography laboratory operations.
- Problem solver (over 100 analytical projects per year)

Professional Memberships:

ACS - American Chemical Society

PMSE - Polymeric Materials Science and Engineering

Presentations, Publications & Patents:

Publications: 22 in referred journals

1. "Characterization and Modeling of Metallocene-based Branch-block copolymers," A.H. Dekmezian, J.B. Soares, P. Jiang, C. Garica-Franco, W. Weng, H. Fruitwala, T. Sun, D. Sarzotti, *Macromol.* **2002**, (accepted for publication)
2. "Long chain branched isotactic polypropylene," W. Weng, W. Hu, A.H. Dekmezian, C. J. Ruff *Macromol.* **2002**, *35*, 3838-3843.
3. "Synthesis of Long-chain Branched propylene polymers via macromonomer incorporation," W.Weng, E.J. Markel, and A.H. Dekmezian, *Macromol. Rapid Commun.* **2001**, *22*, 1488-1492.
4. "Long chain branch polymer chain dimensions: application of topology to the Zimm-Stockmayer model," D. Bonchev, E.J. Markel, A.H. Dekmezian, **Polymer** **2000**, *43*, 203-222.
5. "Topological analysis of long chain branching patterns in polyolefins," D. Bonchev, E.J. Markel, A.H. Dekmezian, *J. Chem. Inf. Comput. Sci.* **2001**, *41*, 1274-1285.
6. "Synthesis of Vinyl Terminated Isotactic Polypropylene" Weng, W; Markel, E. J.; Dekmezian, A. H. Accepted for publication, *Macromol. Rapid Commun.* **2000**.
7. "Metallocene-Based Branch-Block Copolymers" Markel, E. J.; Weng, W; Peacock, A. H. Dekmezian, A. H. Submitted for publication, *Macromolecules* 2000.

8. "A topological analysis of long-chain branching patterns in polyolefins," D. Bonchev, A.H. Dekmejian, and E.J. Markel, submitted to *Macromolecules*.
9. "A topological analysis of long-chain branching patterns in polyolefins. 2. Rheological models for monodisperse polyethylenes," E.J. Markel, D. Bonchev, A.H. Dekmejian, and A. Faldi, submitted to *Macromolecules*.
10. "The evolution of single-site catalysis," A.A. Montagna, A.H. Dekmejian, and R.M. Burkhardt, *Chemtech*, p. 26-31, December 1997.
11. "Compatibilization of Neoprene and EPDM rubber blends for power transmission belt applications, P. Arjunan, R.B. Kuzhnire, and A.H. Dekmejian, *Rubber World*, vol 215, No. 5, 1997.
12. "Gel permeation chromatography interface to collect solvent-free fractions for composition drift analysis," A.H. Dekmejian, T. Morioka, *J. Poly. Sci., Polymer Physics*, 28, 1903 (1990).
13. "Spectroscopic studies of the structures of Butyl and Bromobutyl rubbers," *Rubber Chem. & Tech.*, 63, 265 (1990).
14. "Interface to on-line eliminate high-boiling GPC solvents for polymer composition distribution studies," A.H. Dekmejian and T. Morioka, *Analytical Chemistry*, 61, 458 (1989).
15. "The polymerization of isobutylene by the adamantane bromide- diethylaluminum chloride catalyst system," I. Kuntz, D.M. Cheng, A.H. Dekmejian, and C.S. Hsu, *J. Poly. Sci., Poly. Chem.*, 25, 3127 (1987).
16. "C-13 NMR relaxation and transitions in Polymers," A.H. Dekmejian, D.E. Axelson, J.J. Dechter, B. and L. Mandelkern, *J. Poly. Sci., Poly. Phys. Ed.*, 23, 367 (1983).
17. "The 6-X-Benzonorbornyl system: A new motional dynamic probe, G.C. Levy, D.J. Craik, B. Norden, M. Phat Viet, and A.H. Dekmejian, *J. Amer. Chem. Soc.* 104, 25, (1982).
18. "An analysis of the Beta transition of linear and branched polyethylene by C-13 NMR," J.J. Dechter, D. Axelson, A.H. Dekmejian, M. Glotin, and L. Mandelkern, *J. Poly. Sci., Poly. Phys. Ed.*, 20, 641 (1982).
19. "The determination of rotational diffusion tensors and internuclear distances in some rigid unsymmetrical molecules," F.A.L. Anet and A.H. Dekmejian, *Bulletin of Magnetic Resonance*, 2, 6, (1981).
20. "Intrinsic Deuterium Isotope Effects on Proton and C-13 chemical shifts," F.A.L. Anet and A.H. Dekmejian, *J. Amer. Chem. Soc.*, 101, 5449 (1979).
21. "An efficient and unambiguous synthesis of 2-hydroxymethyl-1,3-dioxane," A.H. Dekmejian and M.K. Kaloustian, *Synthetic Commun.*, 9, (5) 431 (1979).
22. M. Nele, J.B.P. Soares, A.H. Dekmejian, J.C. Pinto, *Macromol. Theory Simul.*, submitted.

Presentations: Over 20 at scientific conferences (*Most recent listed below*)

1. "Design of Long chain branched Polypropylene architecture," A.H. Dekmejian, W. Weng, E.J. Markel, 2nd European Conference on the Reaction engineering of Polyolefins, Lyon, France, July 1-4, 2002.
2. "Long chain branched polypropylene via macromer incorporation," W. Weng, E.J. Markel, A.H. Dekmejian, 220th ACS National meeting, Polymer Preprints (2000), 41 (2), 1924-1925.
3. "Metallocene Based Branch-Block Copolymers" Markel, E. J.; Weng, W; Peacock, A. J. Dekmejian, A. H. Presented at the Society of Plastics Engineers (SPE) Conference. Houston, TX. Feb.28-March 1, 2000.
4. "Synthesis and Characterization of Vinyl Terminated Isotactic Polypropylene" Weng, W; Markel, E. J.; Dekmejian, A. H. Presented to the 219th ACS National Meeting. San Francisco, CA. March, 2000.
5. "Metallocene Based Branch-Block Copolymers" Markel, E. J.; Weng, W; Peacock, A. J. Dekmejian, A. H. Presented at the 219th ACS National Meeting. San Francisco, CA. March, 2000.
6. "Mixed metallocene based thermoplastic elastomers," A.H. Dekmejian, E.J. Markel, W. Weng, A.J. Peacock, European Conference on Reactor Engineering Processes (ECOREP), Lyon, June, 2000.

7. "Single site catalysis. Its evolution and impact on the polymer field," A.A. Montagna, A.H. Dekmezian, and R.M. Burkhardt. Presented at the Metallocene Conference (MetCon), Chicago, June 16-17, 1997.
8. "A topological analysis of Long chain branching in polyolefins," D. Bonchev, A.H. Dekmezian, and E.J. Markel, ACS meeting, Boston, August 23-27, 1998.
9. "LCB Polymer chain dimensions: application of topology to the Zimm-Stockmayer model," presentation at the 220th ACS National Meeting in Washington, D.C., August 20-24, 2000.
10. "An analysis of block copolymers in the presence of the constituent parent polymers using a novel interface for collecting polymer fractions," A.H. Dekmezian and T. Morioka, ACS Symposium, 19th Akron Conf., U. of Akron, June 19-22 (1988).
11. "High temperature GPC interface to collect solvent-free polymer fractions," A.H. Dekmezian and T. Morioka, Pittsburgh Conference, Atlanta (GA), March 6-10, 1989.
12. "Spectroscopic studies of the structures of Butyl and Bromobutyl rubbers," A.H. Dekmezian, D.M Cheng, ACS Rubber Division meeting, Detroit, Michigan, Oct. 9, 1989.
13. "Carbon-13 NMR relaxation parameters and transitions in polymers," A.H. Dekmezian, J.J. Dechter, B. Borah, and L. Mandelkern, The 1984 International Chemical Congress of Pacific Basin Societies, Dec. 17-21 1984, Honolulu, Hawaii.
14. "Carbon-13 NMR relaxation parameters and transitions in polymers," A.H. Dekmezian, D. E. Axelson, J.J. Dechter, and L. Mandelkern, 31st Canadian Spectroscopy Symposium, Sept. 30-Oct. 3, 1984, St. Jovite, Quebec, Canada.
15. "Determination of very short C-H and H...H internuclear distances by force-field calculations and NMR relaxation studies," Experimental Nuclear Chemistry Conference, April 1980, Tallahassee, Florida.
16. "A Carbon-13 NMR study of the amorphous region of branched polyethylenes," ACS Meeting, Dec. 10-13, New Orleans, Louisiana.

Patents: 43 Patents

8,227,547	Foamable thermoplastic reactor blends and foam articles therefrom
8,106,127	Heterogeneous in-reactor polymer blends
8,101,685	Thermoplastic elastomer polyolefin in-reactor blends and molded articles therefrom
8,093,336	Heterogeneous polymer blend with continuous elastomeric phase and process of making the same
8,093,335	Thermoplastic polyolefin in-reactor blends and molded articles therefrom
8,088,867	Multiple catalyst system for olefin polymerization and polymers produced therefrom
8,071,687	Multiple catalyst system for olefin polymerization and polymers produced therefrom
8,038,917	Process for preparing articles
8,022,142	Thermoplastic olefin compositions
7,951,872	Heterogeneous polymer blend with continuous elastomeric phase and process of making the same
7,935,761	Process for preparing articles
7,935,760	Process of making a heterogeneous polymer blend
7,928,164	Homogeneous polymer blend and process of making the same
7,915,345	Solution blending process for preparing thermoplastic vulcanizates
7,524,910	Polyolefin adhesive compositions and articles made therefrom
7,294,681	Multiple catalyst system for olefin polymerization and polymers produced therefrom
7,132,486	Linear low density polyethylenes with high melt strength and high melt index ratio
7,101,936	Olefin polymerization process to produce branched polymer compositions
7,005,491	Propylene diene copolymerized polymers

6,977,287	Propylene diene copolymers
6,884,747	Linear low density polyethylenes with high melt strength and high melt index ratio
6,809,168	Articles formed from propylene diene copolymers
6,780,936	Diene-modified propylene polymer nucleating agents
6,774,191	Propylene polymers incorporating polyethylene macromers
6,750,307	Propylene polymers incorporating polyethylene macromers
6,734,265	Linear low density polyethylenes with high melt strength and high melt index ratio
6,660,809	Propylene polymers incorporating polyethylene macromers
6,573,350	Branched semi-crystalline high-C3 ethylene-propylene compositions
6,569,965	Branched semi-crystalline high-C3 ethylene-propylene polymer compositions
6,451,915	Thermoplastic elastomers having improved processing and physical property balance
6,428,901	Films formed from blends of polyethylene and polypropylene
6,423,793	Elastomeric propylene polymers
6,407,171	Blends of polyethylene and polypropylene
6,342,574	Propylene polymers incorporating macromers
6,297,301	Thermoplastic elastomer compositions having improved processing properties
6,225,432	Branched polypropylene compositions
6,197,910	Propylene polymers incorporating macromers
6,184,327	Elastomeric propylene polymers
6,147,180	Thermoplastic elastomer compositions from branched olefin copolymers
6,117,962	Vinyl-containing stereospecific polypropylene macromers
6,114,477	Polymerization process
6,114,457	High melt strength polyethylene compositions
5,039,614	Method and apparatus for collecting samples for analysis of chemical composition

Forensic Experience:

Cases Worked is 4, Depositions Given is 0, Trial Testimony Given is 0.

Use of this CV is prohibited until we have a mutually signed agreement concerning your engagement of Causey Engineering LLC. Pending such, the use of our name is also prohibited, and we reserve the right to accept assignment by others in lieu of your firm.