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# DR. MICHAEL CHARLES GRADY

## EDUCATION

1991 – 1997 Swiss Federal Institute of Technology - Eidgenössische Technische Hochschule Zürich, Switzerland, *Dr. Sc. in Chemical Engineering/Material Science*

- Dissertation – Preparation of ω-Unsaturated Oligo (Methyl Methacrylate) Macromonomer and Its Application in Emulsion Polymerization: Key Learning's About Radical Desorption.
- Advisors – Ulrich Suter, ETHZ, Institute for Polymers and W. Harmon Ray, University of Wisconsin, Department of Chemical Engineering.

1982 - 1984 University of Pennsylvania, Philadelphia, PA, *MSc in Chemical and Biochemical Engineering*

- Thesis – Adsorption of 2-Propanol on H-ZSM-5 Zeolite: Evidence for stable carbenium ions.
- Advisor – Raymond J. Gorte.

1977 - 1982 Drexel University, Philadelphia, PA, *BSc in Chemical and Biochemical Engineering*

## PROFESSIONAL EXPERIENCE

*May 2016 - Present,* **Global Process Development Manager**, *Axalta Coating Solutions, Wilmington, DE 19880*. Managing a 25person global team dedicated to new process and product development for the automotive and industrial coatings markets. Focused on new process development, existing process optimization and new product scale-up and commercialization for a $4.5Bn in sales global company in the key areas of resin, pigment dispersion and paint production across 15 global sites. The team also supports new capital investment and acquisition integration projects. The team is comprised of a mix of resin engineers, dispersion engineers, paint and product engineers that engage with the global research and development, process technology and operations technology teams in the Americas, Europe and Asia. The portfolio of programs, approximately 50, for the team has a net present value exceeding $200MM. In the last year over $5MM in new capital investment approved in support of productivity improvement programs and 10 new technical programs initiated and approved. Use people and project management skills learned through DuPont and Axalta training and experience to manage the portfolio and team. Regularly engage with senior management in the multiple stage gate processes used to manage the corporation's portfolio.

*September 2012 – May 2016,* **Technology Manager**, *Industrial Biosciences, E.I. duPont de Nemours and Company, Inc. at the Experimental Station, Wilmington, DE 19880.* Managed a 20 person Bioactives and Biomaterials Process Development team working on a portfolio of new product developments each with project net present values greater than $100MM. Served as Interim Technology Director for a team of 120 engineers and scientists as part of the Industrial Bioscience's Wilmington area Research and Development Team. Reported directly to the Vice President of Research and Development. The Wilmington area team was part of the larger 450 persons Industrial Biosciences Research and Development team. As part of the Wilmington area management team worked diligently to properly integrate the Genecor, Inc. technology team acquired in 2008 by DuPont through its acquisition of Danisco Nutrition and Health with the existing DuPont Industrial Biosciences team. Proposed a variety of initiatives to cross-fertilize efforts across the two organizations, engaged closely with the Industrial Biosciences' Manufacturing Technology teams to broaden the team's scope and took part in the many Human Resources functions including merit reviews, promotion process and portfolio resource management. Engaged the Central Research and Development management to align and coordinate efforts across mutual programs.

Actively engaged in Process Safety Management at the Experimental Station and other sites involving DuPont Industrial Bioscience employees.

*September 2012 – May 2016,* **New Business Development Technical Liaison**, *Industrial Biosciences, E.I. duPont de Nemours and Company, Inc. at the Experimental Station, Wilmington, DE 19880.* Represented R&D as New Business Development Liaison for a new to the world polysaccharide platform engaging in visits, interactions and negotiations with potential sucrose partners and polysaccharide product customers, mostly in the EU. Organized and set structure for 100 person team within DuPont R&D working on the polysaccharide platform across Industrial Biosciences, Central Research and Development, DuPont Engineering Technologies and Corporate Analytical. Identified and negotiated agreement with tolling facility and oversaw technology transfer to produce polysaccharide at multi-ton scale. Established a polysaccharide derivatives team and facility at DuPont's Canadian research facility in Kingston, Ontario to make chemically modified polysaccharides at larger scale. On-going identification of key gaps and issues related to progressing platform towards commercialization. Also represent R&D as the Biomaterials Business Integration Team R&D lead and active member of the Stage 0 early concept vetting process. Makes frequent use of Project Management Training in these efforts.

*June 2007 – September 2012,* **Global Technology Leader for BioFuels Development**, **Senior Engineering Fellow**, *Central Research and Development, E.I. duPont de Nemours and Company, Inc. at the Experimental Station, Wilmington, DE 19880.* DuPont is in a joint venture with British Petroleum to develop a next generation biofuel, specifically isobutanol, and I was the Process Technology Leader setting program direction and aligning the resources of a team of over 50 bioengineers, biochemists and microbiologists developing a commercially viable process based on a variety of substrates including different grains and sugarcane. The effort developed multiple *in situ* product removal techniques including liquid-liquid extraction using corn oil released from the grain, reactive liquid extraction again using corn oil and naturally occurring lipase as well as a range of vacuum distillation processes. Awarded over 20 patents in the area. My fermentation modeling formed the basis for the rate, titer and yield targets required of the microorganism that set direction for the strain development teams. Aspen modeling of the process, including Icarus cost-estimating of Manufacturing Plant 1 economics, set the financial targets for the fuel program. Engaged with the Senior Leadership Steering Team of the joint venture Butamax, progressed technology through scale-up first at a toller's facility and then at the $50MM pilot facility at BP's Hull, England site and eventually demonstrated best-in-class rate, titer and yield performance.

*1998 – June, 2007,* **Global Technology Leader for Resin Development, Engineering Fellow**, **Senior Engineering Associate 1998 – 2005,** *DuPont Performance Coatings*, E.I. *duPont de Nemours and Company, Inc. at Marshall Laboratory in Philadelphia, PA.* Responsible for setting technical direction for a group of about 15 engineers, chemists and technicians focused on developing new resins and resin processes important to the Performance Coatings business with over $3B in sales. Acrylic, polyester and oligomeric/small-molecule resins for use in coatings' formulations within DPC and DuPont were the principal resin types made by addition and condensation polymerization. Oversaw and coordinated efforts in laboratory, pilot-plant and commercial facilities in North America, South America and Europe to commercialize many new resin formulas generating significant sales. In this period focused on two key areas – the advent of oligomeric resin materials for use in very low volatile organic content coatings and the secondary mechanisms in free-radical acrylic polymerization that become dominant in higher temperature acrylic polymerizations. For the former I worked on establishing equipment and method infrastructure to develop and commercialize the oligomeric materials including high-throughput laboratory techniques combined with spectroscopic methods. For the latter I engaged with university researchers, Soroush at Drexel University and Hutchinson at Queen's University, while carrying out my own research in the laboratory. This work has led to over 25 journal articles on the underlying kinetic mechanisms while working with 3 different universities to develop the improved understanding of polymerization chemistry fundamentals and remains current today. Within DuPont the acrylic chemistry fundamentals were advanced further by Kalfas, Richards and Congalidis into a modeling framework for predicting operation at commercial scale.

*1997 – Present,* ***Adjunct Professor of Chemical Engineering*** *at Drexel University, Rowan University and the University of Pennsylvania.* Graduate courses taught – Chemical Engineering Advanced Thermodynamics, Polymer Reaction Engineering, Bioprocess Separations and Process Control. Undergraduate courses taught – Chemical

Engineering Statistics, Fluid Mechanics, Heat Transfer, Mass Transfer, Process Control, Material Balances, Polymer Processing, Material Science, Engineering Fundamentals, Unit Operations Laboratory and Senior Design Advisor. Member, Industrial Advisory Board, Drexel University.

*1982-1998,* **Principal Investigator, Engineering Associate from Senior Engineer,** *DuPont Performance Coatings, E.I. duPont de Nemours and Company, Inc. at Marshall Laboratory in Philadelphia, PA.* Responsible for the development of new products and processes of importance to the Dupont Performance Coatings Business. Invented, developed and commercialized a new process, 1998, to make solution acrylics employing high temperature, elevated pressure and continuous operation coupled to existing semi-batch reactor assets. Commercialized this process by demonstrating capability in the laboratory and semi-works, overseeing the project to install the process in a commercial facility and demonstrating capability in the plant. Each step required innovative equipment design and advanced control methods for safe and reproducible operation. The $6MM project to install the "Hybrid Process" in the Front Royal, VA plant progressed on time and under budget. The process started-up well and supports significant sales in clear-coat formulations still to this day. Invented, developed and commercialized a fully continuous process to make solution acrylics, 1993. Oversaw the $1 MM project to install a semi-works version of the process and co-managed a $6 MM project to install a commercial version in the Tlalnepantla, Mexico City, Mexico facility. The process started-up on time, under-budget and the resin produced in the facility met specification from the start and currently support sales in the Centari line. Spent 6 months away from family during start-up while leading the commissioning team to successful production. This was a first of its kind facility. Continued to develop formulas and advanced control methods to make use of a continuous process for making solution acrylics. In the late 1980's worked as part of a commercialization team in the Specialty Resins business. Scaled-up the first commercial group transfer polymerization reactor and supplied products made from the reactor to the Specialty Resins business. Coordinated toll manufacturing efforts for the Specialty Resins business working with customers like Cook Paint and Varnish, Kansas City. In the mid-1980's invented, developed and commercialized an improved process for making hydroxylated polyesters for use in enamel coatings. Recognizing the inherent difficulties of the conventional alkyd method, I used chemical engineering principles and mathematical simulation to devise a solution, designed a new distillation column and process for controlling glycol loss and installed the distillation column and associated equipment in commercial facilities thoughout the America's. Total project cost at $3.0 MM and it enabled successful production of hydroxylated polyesters for use in enamel coatings important to lower volatile organic content coating developments at the time.

## SELECTED PUBLICATIONS, PATENTS AND PRESENTATIONS

### *Selected Publications*

1. Moghadam, Nazanin, Liu, Shi, Srinivasan, Sriraj, **Grady, Michael C**., Rappe, Andrew M., Soroush, Masoud "Theoretical Study of Intermolecular Chain Transfer to Polymer Reactions of Alkyl Acrylates" *Industrial & Engineering Chemistry Research* (2015), 54(16), 4148-4165.
2. Liu, Shi; Srinivasan, Sriraj; Tao, Jianmin; **Grady, Michael C.**; Soroush, Masoud; Rappe, Andrew M. "Modeling Spin-Forbidden Monomer Self-Initiation Reactions in Spontaneous Free-Radical Polymerization of Acrylates and Methacrylates" *Journal of Physical Chemistry A* (2014), 118(40), 9310-9318.
3. Moghadam, Nazanin; Srinivasan, Sriraj; **Grady, Michael C.**; Rappe, Andrew M.; Soroush, Masoud "Theoretical Study of Chain Transfer to Solvent Reactions of Alkyl Acrylates" *Journal of Physical Chemistry A* (2014), 118(29), 5474-5487.
4. Liu, Shi; Srinivasan, Sriraj; **Grady, Michael C.**; Soroush, Masoud; Rappe, Andrew M. "Backbiting and β-scission reactions in free-radical polymerization of methyl acrylate" *International Journal of Quantum Chemistry* (2014), 114(5), 345-360.
5. Moghadam, Nazanin; Liu, Shi; Srinivasan, Sriraj; **Grady, Michael C.**; Soroush, Masoud; Rappe, Andrew M. "Computational Study of Chain Transfer to Monomer Reactions in High-Temperature Polymerization of Alkyl Acrylates" *Journal of Physical Chemistry A* (2013), 117(12), 2605-2618.
6. Liu, Shi; Srinivasan, Sriraj; **Grady, Michael C.**; Soroush, Masoud; Rappe, Andrew M. "Computational Study of Cyclohexanone-Monomer Co-Initiation Mechanism in Thermal Homopolymerization of Methyl Methacrylate and Methyl Acrylate" s*Journal of Physical Chemistry A* (2012), 116(22), 5337-5348.
7. Srinivasan, Sriraj; Lee, Myung Won; **Grady, Michael C.**; Soroush, Masoud; Rappe, Andrew M. "Computational Evidence for Self-Initiation in Spontaneous High-Temperature Polymerization of Methyl

Methacrylate" *Journal of Physical Chemistry A* (2011), 115(6), 1125-1132.

8. Srinivasan, Sriraj; Lee, Myung Won; **Grady, Michael C.**; Soroush, Masoud; Rappe, Andrew M. "Experimental study of spontaneous thermal homopolymerization of methyl and n-butyl acrylate" *Journal of Physical Chemistry A* (2011), 115(6), 1125-1132.
9. Srinivasan, Sriraj; Lee, Myung Won; **Grady, Michael C.**; Soroush, Masoud; Rappe, Andrew M. "Experimental study of spontaneous thermal homopolymerization of methyl and n-butyl acrylate" *Journal of Physical Chemistry A* (2010), 114(30), 7975-7983.
10. Older, Christina M.; Kristjansdottir, Soley; Ritter, Joachim C.; Tam, Wilson; **Grady, Michael C.** "Development of commercially viable thermomorphic catalysts for controlled radical polymerization" *Chemical Industries* (Boca Raton, FL, United States) (2009), 123(Catalysis of Organic Reactions), 319-328.
11. Srinivasan, Sriraj; Lee, Myung Won; **Grady, Michael C.**; Soroush, Masoud; Rappe, Andrew M. *Journal of Physical Chemistry A* (2009), 113(40), 10787-10794.
12. Wang, Wei; Hutchinson, Robin A. and **Grady, Michael C.** "Study of Butyl Methacrylate Depropagation Behavior Using Batch Experiments in Combination with Modeling" *Industrial Engineering Chemistry and Research*, (4/9/2009 on Web).
13. Nikitin, Anatoly N.; **Grady, Michael C.**; Kalfas, Georgios A.; Hutchinson, Robin A. "Investigation of catalytic chain transfer copolymerization of methacrylates." *Macromolecular Reaction Engineering*, (2008), 2(5), 422-435.
14. Soroush, Masoud; **Grady, Michael C.**; Kalfas, George A. "Free-radical polymerization at higher temperatures: Systems impacts of secondary reactions." *Computers & Chemical Engineering* (2008), 32(9), 2155-2167.
15. Rantow, Felix S.; Soroush, Masoud; **Grady, Michael C**. "Reduced-order model for monitoring spectroscopic and chromatographic polymer properties." *Journal of Chemometrics* (2007), 21(12), 612-620.
16. F.S. Rantow, M. Sorous, **M.C. Grady** and GA Kalfas, "Spontaneous polymerization and chain microstructure evolution in high-temperature solution polymerization of n-butyl acrylate", *Polymer,* 47(4), 1423-1435, (2006).
17. Grady, Michael C.. "Latex Technology." Kirk-Othmer Encyclopedia of Chemical Technology (5th Edition) (2005), 14 706-727; Encyclopedia of Polymer Science and Technology (4th Edition) (2014), 7, 457-478.
18. Quan, C., M. Soroush, **M. C. Grady**, J. E. Hansen, and W.J. Simonsick "High Temperature Homo-Polymerization of Ethyl Acrylate and n-Butyl Acrylate: Polymer Characterization," *Macromolecules*, 38, 7619-7628 (2005).
19. Rantow, F., M. Soroush, and **M. C. Grady**, "Optimal Control of a High-Temperature Semi-Batch Solution Polymerization Reactor," *Proc. of ACC* (2005).
20. **Grady, M. C**., G. A. Kalfas, J. R. Richards, J.P. Congalidis, M. Soroush, F. S. Rantow, R. A. Hutchinson, and D. Li, "Higher Temperature Free-Radical Acrylic Polymerization - A More Complete Model of Acrylate and Methacrylate Co-Polymerization," *Proc. of 7th World Congress of Chemical Engineering*, Glasgow, Scotland, July 10-14 (2005).
21. Baker, E., Gidden, J., Simonsick, W.J. and **Grady, M.C.** "Sequence dependent conformations of glycidyl methacrylate/n-butyl methacrylate copolymers in the gas phase", *International Journal of Mass Spectrometry*, 238(3), 279-286, (2004).
22. Quan, C., M. Soroush, and **M. C. Grady**, "Product Quality Improvement in a High-Temperature, Free-Radical Polymerization Reactor," *Proc. of ACC*, 3980-3985 (2003).
23. Zambare, B., M. Soroush, and **M. C. Grady**, "Real-Time Multi-Rate State Estimation in a Pilot-Scale Polymerization Reactor," *AIChE J.*, **48(5)**, 1022-1033 (2002).
24. Simonsick, W.J., Hutchinson, R.A. and **Grady, M.C.** "Studies of higher temperature polymerization of n-butyl acrylate and n-butyl methacrylate", *Macromolecular Symposia* (2002), 182(3rd IUPAC-Sponsored International Symposium on Free-Radical Polymerization: Kinetics and Mechanism, 2001), 149-168.
25. Tyner, D., Soroush, M. and **Grady, M.C.** "Adaptive temperature control of multiproduct jacketed reactors", *Industrial & Engineering Chemistry Research* (1999), 38(11), 4337-4344.
26. **Grady, M.C.** "Studying radical exit in emulsion polymerization", *DECHEMA* (1998), 134(6th International Workshop on Polymer Reaction Engineering, 1998), 313-326.
27. Simonsick, W.J. and **Grady, M.C.** "The characterization of mixed polyesters by gel permeation chromatography coupled to Fourier transform mass spectrometry", *Polymeric Materials Science and Engineering* (1998), 78, 52.
28. **Grady, M.C.** et al., "End functional copolymers by free-radical addition-fragmentation chain transfer", *Polymer Preprints* (American Chemical Society, Division of Polymer Chemistry) (1997), 38(1), 458.
29. **Grady, M.C**. and Matheson, R.R., Jr. "Small molecule exchange in emulsion polymerization", *Journal of Computer-Aided Materials Design* (1996), 3(1-3, Modeling of Industrial Materials), 296-302.
30. **Grady, M.C.** "Simulation of three-phase distillation of ethylene glycol/water/toluene mixture – its impact on the processing of low-molecular weight hydroxylated polyesters" *Polymeric Materials Science and Engineering* (1988), 58, 777-81.
31. **Grady, M.C.** and Gorte, R.J. "Adsorption of 2-propanol and propene on H-ZSM-5, evidence for stable carbenium ion formation" *Journal of Physical Chemistry* (1985), 89(7), 1305-8.

*Patents and Select Applications*

1. WO 2015038885 A1 20150319 **Grady, Michael Charles** et al. "Hydrolysis at high ester to water ratios for recovering alcohols from a fatty acid"
2. US 9,206,448 **Grady, Michael Charles** et al. "Extraction solvents derived from oil for alcohol removal in extractive fermentation."
3. US 9,175,315 **Grady, Michael Charles** et al. "Production of alcohol esters and in situ product removal during alcohol fermentation."
4. US 9,109,196 **Grady, Michael Charles** et al. "Processes and systems for the production of fermentation products."
5. US 9,040,263 **Grady, Michael Charles** et al. "Production of alcohol esters and in situ product removal during alcohol fermentation."
6. US 8,969,055 **Grady, Michael Charles** et al. "Method for producing butanol using extractive fermentation with electrolyte addition."
7. US 20140335582 A1 20141113, **Grady, Michael Charles** et al. "Fermentive Production of Four Carbon Alcohols."
8. US 8,865,443 **Grady, Michael Charles** et al. "Extraction solvents derived from oil for alcohol removal in extractive fermentation."
9. US 8,828,695 **Grady, Michael Charles** et al. "Method for producing butanol using two-phase extractive fermentation."
10. US 8,628,643 **Grady, Michael Charles** et al. "Process to remove product alcohol from a fermentation by vaporization under vacuum"
11. US 8,617,861 **Grady, Michael Charles** et al. "Method for producing butanol using extractive fermentation with electrolyte addition."
12. US 8,574,406 **Grady, Michael Charles** et al. "Process to remove product alcohol from a fermentation by vaporization under vacuum."
13. US 8,569,552 **Grady, Michael Charles** et al. "Recovery of butanol from a mixture of butanol, water, and an organic extractant."
14. US 8,563,788 **Grady, Michael Charles** et al. "Recovery of butanol from a mixture of butanol, water, and an organic extractant."
15. US 8,557,540 **Grady, Michael Charles** et al. "Methods and systems for removing undissolved solids prior to extractive fermentation in the production of butanol."
16. US 8,476,047 **Grady, Michael Charles** et al. "Extraction solvents derived from oil for alcohol removal in extractive fermentation."
17. US 8,409,834 **Grady, Michael Charles** et al. "Extraction solvents derived from oil for alcohol removal in extractive fermentation."
18. US 8,373,009 **Grady, Michael Charles** et al. "Recovery of butanol from a mixture of butanol, water, and an organic extractant."
19. US 8,373,008 **Grady, Michael Charles** et al. "Recovery of butanol from a mixture of butanol, water, and an organic extractant."
20. US 8,030,422 **Grady, Michael Charles** et al. "Recoverable polymer-bound homogeneous catalysts for catalytic chain transfer process."
21. US 7,897,676 **Grady, Michael Charles** et al. "Two component coating compositions and coatings produced therefrom."
22. US 7,858,692 **Grady, Michael Charles** et al. "Two component coating compositions and coatings produced therefrom."
23. US 7,585,924 **Grady, Michael Charles** "Pressurized high temperature polymerization process and polymerization system used therein."
24. US 6,989,421 **Grady, Michael Charles** "Two component coating compositions and coatings produced therefrom."
25. US Patent, Application Number 60/484,393, filed on July 2, 2003, "Thermally Initiated Polymerization Process," **M.C. Grady**, C. Quan, and M. Soroush.
26. U.S. Patent 5,447,998, **Grady, Michael C.** and Gregorovich, Basil V. "Clear-coat Resins by Continuous Polymerization."

*Presentations*

1. Council for Chemical Research, Washington, D.C., May 2015, "Disruptive technology in bio-based industrials". **Grady, Michael**.
2. AIChE Meeting, Pittsburgh, PA November 2012, "Understanding back-biting and beta-scission in self-

initiated polymerization of methyl acrylate: a theoretical study", "Kinetics of mechanisms of chain transfer to polymer reactions in alkyl acrylates", "A theoretical study of mechanisms for chain transfer to monomer in alkyl acrylates" Moghadam, Nazanin; Soroush, Masoud; Rappe, Andrew M.; Liu, Shi; Srinivasan, Sriraj; **Grady, Michael C.**

3. University of Illinois Department of Chemical Engineering Research Symposium, April 2012, "Biofuel Process Development", **Grady, Michael C**.
4. AIChE Meeting, Salt Lake City, UT November 2010, "Biobutanol Sustainable Development with Life Cycle Analysis", Barr, Steve; Jenkins, Robin; Vrana, Bruce; Xu, Tom; **Grady, Michael**; Zaher, Joseph; Ames, Tyler; Schubert, Adam,
5. 37th Great Lakes Regional Meeting of the American Chemical Society, Milwaukee, WI, United States, May 31-June 2 (2006) "Higher temperature free-radical acrylic polymerization - modelling the secondary mechanisms in acrylate/methacrylate co-polymerization." **Michael C. Grady** and G.A. Kalfas.
6. World Congress of Chemical Engineering, 7th, Glasgow, United Kingdom, July 10-14, 2005, "Higher temperature free-radical acrylic polymerization - a more complete model of acrylate and methacrylate co-polymerization.", **M.C. Grady** et al.
7. AIChE Meeting, Austin, TX November 2004, "High Temperature Acrylate Polymerization: Decentralized Parameter Estimation and State Estimation", Felix Rantow, **Michael C. Grady** and Masoud Soroush.
8. International Coatings Exhibition Course, Chicago, IL October 2004, "Advances in Solvent-Borne Acrylics", **Michael C. Grady** and Donald A. Paquet Jr.
9. Polymer Reaction Engineering Section, Centre Jacques Cartier Meetings, Lyon, France December 2003, "Higher Temperature Acrylate Polymerizations", **Michael C. Grady**, Congling Quan and Masoud Soroush.
10. AIChE Meeting, Chicago, IL November 2003, "Characterization and Kinetics of Higher Temperature Polymerization of n-Butyl Acrylate", Congling Quan, Masoud Soroush and **Michael C. Grady**.
11. Polymer Reaction Engineering V, Quebec City, Canada May 2003, "Using Controlled Acrylic Architecture in Performance Coatings", **Michael C. Grady**, Tom Darling, Alexei Gridnev, Sheau-Hwa Ma, Bob Prottas, Tony Moy, Karen Visscher, Jeff Johnson, Don Paquet Jr. and Jos Huybrechts.
12. Lecture Series Queen's University, Kingston, Ontario, Canada in November 2001, "Technology Issues Driving the Coatings Market", **Michael C. Grady**.
13. IUPAC sponsored "International Symposium on Free-Radical Acrylic Polymerization: Kinetics and Mechanisms", Ciocco, Tuscany, Italy June 2001, "Kinetic Studies of Higher Temperature Acrylic Polymerization of n-Butyl Methacrylate and n-Butyl Acrylate", **Michael C. Grady**, William J. Simonsick Jr. and Robin A. Hutchinson.
14. 3rd Biennial North American Conference on the Science and Technology of Emulsion Polymers/Polymer Colloids, Hilton Head, SC Nov 1999, "The Role of Radical Exit in Semi-Batch Emulsion Polymerization", Michael C. Grady

## PROFESSIONAL MEMBERSHIPS

Member AICHE, Member ACS